DRAFT REPORT
SITE INSPECTION
CHARLESTON HARBOR SITE
CONCORD STREET
CHARLESTON, SOUTH CAROLINA

PREPARED FOR
THE NATIONAL PARK SERVICE

PREPARED BY

PROFESSIONAL SERVICE INDUSTRIES, INC.

PSI PROJECT NUMBER 513-44008

JUNE, 1994

psi

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Professional Service Industries, Inc.

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1.0 INTRODUCTION

Under Task Order Number 13 with the National Park Service, Professional Service Industries, Inc. (PSI) conducted a Site Inspection (SI) at the Charleston Harbor Site on Concord Street in Charleston, South Carolina. The purpose of this investigation is to collect information concerning conditions at the Charleston Harbor Site sufficient to assess the threat posed to human health and the environment and to determine the need for additional investigation. The scope of the investigation included reviewing previous file information, sampling of environmental media to document Hazard Ranking System (HRS) factor values and scores, and collecting additional non-sampling information.

In addition to samples collected during the SI at the Charleston Harbor Site for the National Park Service (NPS), samples from other investigations were used in the SI report. The northeast portion of the property is currently under environmental investigation by Killam and Associates to gather data in regard to the proposed construction of an aquarium for the City of Charleston. Soil samples NPS-SB-01-1, NPS-SB-01-2, and NPS-SB-01-3 were collected by PSI from a soil boring drilled by Kiliman Associates for this investigation.

In November 1993, PSI installed three deep wells and one shallow well on-site under the joint direction of NPS and the U.S. Geological Survey. Groundwater samples GS-MW-01-1, GS-MW-01-2, GS-MW-02-1, GS-MW-02-2, GS-MW-02S, GS-MW-03-1, and GS-MW-03-2 were collected from these wells. Soil samples GS-SB-01-1, GS-SB-01-2, GS-SB-01-3, GS-SB-02-1, GS-SB-02-2, GS-SB-02-3, GS-SB-02S, GS-SB-03-1, GS-SB-03-2, and GS-SB-03-3 were also collected during this investigation.

In November 1993, Chester Environmental began conducting a Remedial Investigation and Feasibility Study (RI/FS) at the Calhoun Park Area Site located across Concord Street, directly west of the Charleston Harbor Site. Soil sample CE-AB-01A and groundwater samples CE-BG-01A and CE-BG-01D collected by Chester Environmental were used as background samples for the RI/FS. It was decided by the NPS and the owner of the previous coal gasification plant, South Carolina Electric and Gas, that this background samples would be made available to the NPS for use in the completion of the SI.

Background soil & GW samples for the Calhoun Park Site should be used for the NPS site. NPS background samples should be ~~on-site~~ from Calhoun Park on-site samples.

2.0 SITE DESCRIPTION

2.1 Location

Charleston Harbor Site is located on Concord Street in Charleston, South Carolina, on the west bank of the Cooper River. The geographic coordinates are 32° 47' 28" north latitude and 79° 55' 34" west longitude (Appendix A). The site location is shown in Figure 1 of Appendix B.

Charleston is characterized by a mild, temperate climate. The normal daily average temperature ranges from 51°F in January to 81°F in July. The average annual rainfall is 47 inches, and the average annual lake evaporation is 43 inches. This results in a net annual precipitation of 4 inches (Reference 1, pages 1, 13, 46, and 47). The 2-year, 24-hour rainfall is 5 inches (Reference 2 page 26).

2.2 Site Description

The site consists of approximately four upland acres and 4 acres within the boundaries of the Cooper River (Reference 3, page 1). The property consists of a relatively flat, grassy field with a few small trees and bushes. None of the vegetation appears to be stressed. The only structure currently on site is a small, covered shed constructed of sheet metal and wood, located on the east-central portion of the site. The northeast portion of the site is the proposed site of an aquarium. The site is bordered on the west by Concord Street, on the north by Luden's Marine Equipment, on the south by Dockside Condominiums, and on the east by the Cooper River. A stormwater drain traverses the site from the west and flows into the Cooper River. Large pieces of concrete and the remains of wooden ship building ways and trestles are found on-site near the river. The site layout is shown in Figure 2.

2.3 Operating History and Waste Characteristics

The Charleston Harbor Site is in an area which has been developed since the mid 1700's (Reference 3, page 1). Prior to 1767, the site was open water and marsh of the Cooper River. In 1767, a large shipping wharf was constructed at the southeast corner of the site (Reference 4, pages 2 and 3). In 1852, the western edge of the southern area of the site was partially filled for development as a lumber yard and saw mill. At this time, the southern part of the site was in use as a ship yard as well as a shipping wharf (Reference 4, pages 8 and 9). From 1887 to 1892, the Fernoline Chemical Company occupied what is now Calhoun Park and extended on to the western portion of the subject site, prior to the building of Concord Street. Land use of northern part of the site is unknown after this time until the 1920's. The southern portion of the property was owned by a basket manufacturing company from 1897 to 1911, a fruit company until 1914, and an iron works until 1918. Charleston Dry Dock and Machine Company purchased the southern part of the property in 1919 and the northern part of the property in 1920. Filling in of the site was continued in the 1920s and the 1930s (Reference 4 pages 13,14, 15). It was completed in the 1940s. The site was used for dry docks until the late 1960s or 1970. In the early 1980s the site was an open field similar to what it is at this time (Reference 3, page 2).

Adjacent properties had several industrial uses throughout the years. The property located northwest of the site across Concord Street was a manufactured gas plant using coal and oil from the late 1800s to the 1950s. The property located west of the site across Concord Street was a lumber yard. From 1884 to 1892, a portion of the western adjacent property was used by the Fernoline Chemical Company. The property located south of the site was a shipping wharf throughout much of its developed history (Reference 3, pages 2 and 3). In 1993, Chester Environmental conducted an Remedial Investigation and Feasibility Study (RI/FS) on the manufactured gas plant property (Reference 5, page 1-1).

Several studies have been previously conducted at the Charleston Harbor Site on soils at depths of five feet or less by Davis and Floyd, Inc., in 1989, Chen Northern, Inc. in 1991, and General Engineering Laboratories in 1991.

Analyses of soil samples collected during these investigations revealed the presence of metals and semivolatile organic compounds (Reference 3, page 4 and 5).

In 1992, General Engineering Laboratories conducted an Expanded Site Inspection at the Charleston Harbor Site. Soil, groundwater, surface water, and sediment samples were collected during this investigation. Metals, volatile organics and semivolatile organics were detected in soil, groundwater and sediment at various concentrations (Reference 3, page 9, table 3-13).

3.0 WASTE/SOURCE SAMPLING

3.1 Sampling Locations

Table 1 of Appendix C summarizes the locations and rationale for all samples collected during this investigation. Figures 3 and 4 show the locations for all of the samples. Nine waste/sources samples from five borings were collected from the layer of fill material on the property at depths ranging from 8 to 20 feet below land surface (bls). Two soil samples each were collected from borings located on the northeast, southeast, and southwest portions of the property. Three soil samples were collected from two borings, NPS-SB-04 and GS-SB-02, located on the northwest portion of the property. All of these samples were collected by PSI during the Charleston Harbor Site SI except for the sample collected from GS-SB-02S during the U.S. Geological Survey investigation.

3.2 Analytical Results

Organic analytical results are presented in Table 3. Samples collected from the soil borings in the eastern and southern portions of the property (NPS-SB-01, NPS-SB-02, and NPS-SB-03) were relatively free of organics. Methylene chloride (11 ppb) and acetone (22 ppb) were found in some of the samples but are common laboratory solvents and most likely result from laboratory contamination. Tetrachlorethane (estimated 120 ppb), xylene (estimated 3 ppb), methoxychlor (estimated 2.3 ppb), and aldol (estimated 160 and 180 ppb) were the only other organics detected in these samples. The remaining samples collected from soil borings NPS-SB-04 contained several organics at various concentrations. These include petroleum constituents such as napthalenes and benzene. Naphthalene was detected at an estimated concentration of 3,000,000 ppb in NPS-SB-04-2 located on the northwest portion of property. Pesticide constituents such as 4,4,-DDD and BHCs were also detected, mostly in GS-SB-2S.

Inorganic analytical results are presented in Table 4. Several inorganics including metals used to treat wood were detected at various concentrations in the source samples. Arsenic (3.6 - 33.0 pp m), chromium (14.6 - 52.7 ppm), lead (6.3-361 ppm), and zinc (7.6 -410 ppm) were detected in all of the source samples.

Mercury was detected in NPS-SB-02-2 (1.3 ppm), NPS-SB-02-3 (0.27 ppm), NPS-SB-03-2 (0.67 ppm), and NPS-SB-04-2 (0.42 ppm).

3.3 Conclusions

The Charleston Harbor Site, which was once open water and marsh, has been filled to a few feet above mean sea level. Included in this fill are the remains of serveral ship building ways and trestles, some of which were encountered during drilling. Analytical results of soil samples collected in the fill area revealed the presence of several organics and inorganics including, Polynuclear Aromatic Hydrocarbons (PAHs), potentially related to creoste or coal by-products, and metals consistant with wood treating and metal coating process.

4.0 GROUNDWATER PATHWAY

4.1 Hydrogeologic Setting

Charleston is located in the Atlantic Coastal Plain physiographic province and groundwater regional of South Carolina. This region generally consists of thick, layers of interbeded sand, silt, and clay (Refs. 6, plate 28; 7 pp. 270, 271). Topography of the Charleston area is low-lying and relatively flat. Elevations at the site are generally less than five feet above mean sea level (amsl) (Appendix A).

The major geologic formations in the Charleston area are in descending order, Terrace Deposits, the Cooper Formation, the Santee Limestone, the Black Mingo Formation, the Peedee Formation, the Black Creek formation, and the Middendorf Formation. The Terrace Deposits consist mainly of fine to coarse grained sand, shells, clays, and thin beds of limestone. Thickness of these deposits is generally less than 60 feet (Refs. 8, p.11; 9, p.9). Hydraulic conductivity ranges from 1×10^{-1} to 1×10^{-5} cm/sec depending on the composition of the Terrace Deposits in each area (Ref. 10, p. 29). The Cooper Formation consists of green to brown, clayey, sandy, phosphatic limestone. It is approximately 150 feet thick in the Charleston area and is a confining layer between the upper aquifer in the Terrace Deposits and the lower aquifers. The Santee Limestone consists of white to grey, fossiliferous, phosphatic limestone. It is approximately 200 feet thick in the Charleston area and generally yields less than 300 gallons per minute (gpm) (Refs. 8 p. 10; 10, 9). The Black Mingo Formation consists of fossiliferous limestone, argillaceous sand, carbonated and silica cemented sandstone, and grey to black clay. It is approximately 500 feet thick in the Charleston area and generally yields 300 to 500 gpm. The Peedee Formation consists of fossiliferous, muddy sands and silty, sandy, calcareous clays. It generally yields less than 300 gpm. The Black Creek Formation consisted of grey to green, muddy sand, silty clay, grey to white sand, and shelly limestone. It generally yields 250 to 1,000 gpm.

The Middendorf Formation consists of feldspathic sand, red to grey-green clay, silty clay and clayey silt, under red to grey clay, silt, clay and muddy, feldspathic sand. Thickness of these formations is approximately 2,000 feet in the Charleston area (Refs. 8, p.9; 9, p.9).

The base of the fresh water in Charleston County is variable, and there is little fresh water available in the coastal areas in the shallow aquifers. There are few wells with a large yield in the Charleston area. Most of these are deep and completed in aquifers of the Cretaceous age. Recharge is through the infiltration of rainwater through overlying aquifers and in outcrop areas. The base of the freshwater in Charleston is approximately 1,800 feet below land surface (bls) (Ref. 8, pp. 13,18, 49).

Geology of the site consists of sandy fill material to depths of 8 to 14 feet bls. The fill includes wood and concrete debris. Very soft, black clay is found to depths of 31 to 38 feet bls, overlying very fine to medium, silty black sand to depths of 41 to 50 feet bls. Soft, black, sandy clay underlies the sand. Water levels on site range from 2.6 to 4.2 feet bls. (Appendix B, Figures 5,6,7,8; Appendix D; Appendix E).

4.2 Targets

The City of Charleston obtains potable water from surface water intakes on the Edisto River. The only public supply wells within 4 miles of the site are for the city of Mount Pleasant. The five wells are located approximately 3.5 miles east of the site across the Cooper River and serve approximately 14,000 connections. The wells are completed in the Middendorf aquifer. (Refs. 3, p.9; 11; 12; Appendix A). There are no known private wells located within 4 miles of the site due to salt water in the upper aquifers near the coast. (Refs. 8, p.49; 11;12; Appendix A.)

4.3 Sample Locations

Eighteen groundwater samples were collected from monitoring wells. Eleven of these samples were collected from shallow wells. One well from the Calhoun Park RI/FS is located approximately 1,075 feet west of the site to provide a background location, and the other ten shallow wells, including one from the U.S. Geological Survey investigation are completed into the fill material on site. Seven of the groundwater samples were collected from deep wells. One well from the Calhoun Park RI/FS is located approximately 1, 075 feet west of the site to provide a background location. The remaining six samples were collected from the upper and lower portions of screen in three on site wells, located on the eastern, southern, and northwestern portions of the site. These wells were completed in sand layers approximately 35 to 50 feet bls for the U.S. Geological Survey investigation. Well construction diagrams are located in Appendix E.

4.4 Analytical Results

Organic analytical results are presented in Table 5. The deep on-site wells, GS-MW-01, GS-MW-02, and GS-MW-03, contained few organics, and those were only at low concentrations. These included carbon disulfide, naphthalene, acenaphthene, bis (2-ethylhexyl) phthalate, and heptachlor. Groundwater samples collected from shallow wells located on the southern portion of the site contain only low concentrations of organics. Shallow monitoring wells NPS-GW-11, located on the north central portion of the property, and NPS-GW-12, located near the northern boundary of the property had the highest concentrations of organics. NPS-GW-11 contained naphthalene (est. 220 ppb), acenaphthene (est. 130 ppb), 2-methylnapthalene (est. 87 ppb), phenanthrene (61 ppb), and beta -BHC (est. 0.039 ppb). NPS-GW-12 contained naphthalene (est. 180 ppb), benzene (92 ppb), ethylbenzene (53 ppb), ethenylmethylbenzene (est. 160 ppb), 2-methylnapthalene (63 ppb), phenanthrene (59 ppb), and methoxychlor (est. 0.17 ppb). Samples collected from the background wells CE-BG-01A and CE-BG-01D contained no detectable organics.

Inorganic analytical results are presented in Table 6. Several inorganics were detected in all of the shallow, on-site wells. These included barium (82.6-1530 ppb), manganese (596-1670 ppb), and zinc (8.4-25.1 ppb). Arsenic was detected in NPS-GW-02 (4.7 ppb), NPS-GW-08 (est. 27.0 ppb), NPS-GW-11 (est. 34.5 ppb), NPS-GW-12 (5.3 ppb), and GS-MW-02S (29.4 ppb). Cyanide was detected in NPS-GW-01 (46.2 ppb). Chromium was detected in NPS-GW-11 (6.3 ppb) and GS-MW-02S (17.7 ppb). Lead was detected in NPS-GW-09 (2.2 ppb), NPS-GW-10 (est. 15.7 ppb), NPS-GW-11 (2.4 ppb), NPS-GW-12 (3.7 ppb), and GS-MW-02S (2.8 ppb). Mercury was detected in NPS-GW-12 (0.29 ppb). Several inorganics were also detected in all of the deeper on-site wells. These included barium (32.4 - 45.9 ppb), manganese (21.0 -119 ppb), and zinc (7.7 - 50.1 ppb). Chromium was detected in GS-MW-01-1 (44.3 ppb), GS-MW-01-2 (35.2 ppb), GS-MW-03-1 (30.5 ppb), and GS-MW-03-2 (11.3 ppb). Cyanide was detected in GS-MW-02-1 (50.1 ppb), GS-MW-02-2 (52.6 ppb), and GS-MW-03-2 (11.9 ppb). Lead was detected in GS-MW-02-2 (9.0 ppb). Mercury was detected in GS-MW-02-1 (0.26 ppb). Samples collected from the background wells contained few inorganics. These included arsenic (24.9 ppb), barium (86.5 ppb), lead (est. 102 ppb), and mercury (0.5 ppb) in CE-BG-01A, the shallow well, Barium (38.1 ppb) was detected in CE-BG-01D, the deep well.

4.5 Conclusions

Several organics and inorganics were detected in the on-site wells. The presence of these contaminants in wells completed in a sand layer in the terrace deposits indicates that they have migrated from the fill to this sandy aquifer. However, due to salt water, the upper aquifers are not used as a sources of potable water. The city of Mount Pleasant receives water from five deep wells located approximately 3.5 miles west of the site. These wells serve 14,000 connections.

5.0 SURFACE WATER PATHWAY

how can it? There is a berm at the River edge that's 2-4' higher than the NPS property

5.1 Hydrologic Setting

Surface water run off from the site flows east to the Cooper River which forms the eastern boundary of the site. The Cooper River flows south approximately 1.5 miles to where it is joined by the Ashley River to form Charleston Harbor. Although it is tidally influenced, water in Charleston Harbor generally flows southeast approximately 4.5 miles to the Atlantic Ocean. The 15-mile surface water pathway continues for 9 miles through the ocean. (Appendix A).

5.2 Target

Charleston obtains potable water from surface water intakes located on the Edisto River. These intakes are not on the surface water pathway and are not affected by the Charleston Harbor Site (Refs. 3, p.9;11; Appendix A). Fishing occurs on the surface water pathway, mainly in the Atlantic Ocean. As shown by the numerous fishing boats and shrimp boats in the Charleston Area. There are approximately 20,000 feet of wetlands bordering Charleston Harbor along the 15-mile surface water pathway. (Appendix A). Several threatened and endangered species are found throughout the coastal waters of South Carolina, which includes the surface water pathway for the Charleston Harbor Site. These species include the shortnose surgeon fish (Acipenser brevirostrum), four endangered species of whales, two threatened species of turtles, and three endangered species of turtles (Ref.13).

5.3 Sample Locations

Ten surface water and ten sediment samples were collected in pairs from the Cooper River and Charleston Harbor during the Charleston Harbor Site SI. One set was collected approximately 9,500 feet southwest of the site at the southern end of the Charleston Peninsula where the Ashley River empties into Charleston Harbor. Another set was collected approximately 6,500 feet southeast of the site in the area of Shutes Folleys. Three sets were collected approximately 5,000 feet northwest of the site where a stormwater outlet enters the Cooper River. One set was

5.0 SURFACE WATER PATHWAY

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collected approximately 4,500 feet north of the site from the Cooper River. Four sets were collected at the site where a storm water outlet enters the Cooper River.

5.4 Analytical Results

Organic analytical results are presented in Table 7. Few organics were detected in surface water samples. The highest concentrations of organics were detected near the site. Endosulfan sulfate (est. 0.46 ppb) and methoxychlor (est. 0.019 ppb) were detected in NPS-SW-03. Endrin aldehyde (0.23 ppb), endosulfan sulfate (0.091 ppb), and dieldrin (0.053 ppb) were detected in NPS-SW-05. The sediment samples collected near the site, NPS-SD-03, NPS-SD-04, NPS-SD-05, and NPS-SD-10, contained the highest concentrations of organics of all the sediment samples. Fluoranthene was detected in NPS-SD-03 (est. 14,000 ppb), NPS-SD-04 (5,200 ppb), NPS-SD-05 (1,500 ppb), and NPS-SD-10 (13,000 ppb). Pyrene was detected in NPS-SD-03 (est. 15,000 ppb), NPS-SD-04 (5,500 ppb), NPS-SD-05 (5,700 ppb), and NPS-SD-10 (12,000 ppb). Phenanthrene was detected in NPS-SD-03 (11,000 ppb), NPS-SD-04 (4,200 ppb), NPS-SD-05 (3,300 ppb), and NPS-SD-10 (8,400 ppb). Dieldrin was detected in NPS-SD-03 (27 ppb), NPS-SD-04 (14 ppb), NPS-SD-05 (13 ppb), and NPS-SD-10 (est. 4.6 ppb). Several other organics were also detected in these samples.

Inorganic analytical results are presented in Table 8. Several inorganics were detected in all of the surface water samples, including barium (9.9 - 35.8 ppb) and manganese (13.8 - 177 ppb). Arsenic was detected in NPS-SW-01 (5.9 ppb), NPS-SW-02 (5.7 ppb), NPS-SW-03 (17.0 ppb), NPS-SW-05 (9.3 ppb), NPS-SW-06 (4.1 ppb), NPS-SW-08 (5.3 ppb), and NPS-SW-10 (5.5 ppb). Chromium was detected in NPS-SW-03 (16.5 ppb) and NPS-SW-05 (16.6 ppb). Lead was detected in NPS-SW-03 (81.1 ppb) and NPS-SW-10 (est. 31.8 ppb). Zinc was detected at concentrations ranging from 3.4 ppb to 145 ppb is all of the surface water samples except for NPS-SW-06 and NPS-SW-09. Several inorganics were detected in all of the sediment samples.

These include arsenic (2.0-est. 28.8 ppm), barium (3.1 - 94.7 ppm), chromium (6.3-79.8 ppm), lead (1.7 -12,300 ppm), and zinc (12.0 - 24.30). Most of the higher concentrations were detected in sediment samples collected near the site.

5.5 Conclusions

Several organics and inorganics were detected in surface water and sediment samples collected from the surface water pathway. The highest concentrations were detected in samples near the site. There are no potable water intakes located on the surface water pathway, but it is used for fishing. Also, there are wetlands and the ranges of several threatened and endangered species located on the surface water pathway.

6.0 SOIL EXPOSURE AND AIR PATHWAYS

6.1 Physical Conditions

The Charleston Harbor Site mainly consists of a level, grassy field with a few small trees and bushes located in the east-central portion. The property is surrounded on three sides by a fence with locked gates and on the east side by Cooper River.

6.2 Soil and Air Targets

There are approximately 74,093 people living within 4 miles of the site. The distribution is 596 between 0 to 1/4 mile,2,030 between 1/4 to 1/2 mile, 10,622 between 1/2 to 1 mile, 18,787 between 1 to 2 miles, 15,085 between 2 to 3 miles, and 26,973 between 3 to 4 miles (Ref.14). The nearest resident is located less than 1/4 mile west of the site (Appendix A). Several wetland areas are located within 4 miles of the site covering an area of approximately 2,000 acres. The nearest wetland areas are located approximately 1 mile northwest and 1 mile southeast of the site (Appendix A). The ranges of several threatened and endangered species are found throughout the state of South Carolina. Those found specifically in the coastal region are the threatened Arctic peregrine falcon (Falco perekgrinus tundrius), the piping plover (Charadrius melodus), and the wood stork (Mycteria americana) (Ref.13).

6.3 Soil Sample Locations

Five surface soil samples were collected. One was collected during the Calhoun Park RI/FS approximately 1,025 feet south of the site to provide a background location. The remaining four samples were collected on site. Nine subsurface soil samples ranging in depth from 31 to 44 feet bls were collected on site from the sand layer in three deep soil borings were drilled during the installation of monitoring wells GS-MW-01, GS-MW-03 and Gs-GW-03. The borings were located on the eastern, southern, and northwestern portion of the site.

6.4 Soil Analytical Results

Organic analytical results are presented in Table 9. The on-site surface soil samples all contain several organics. The highest levels are in NPS-SB-04-1 which is located near the northwest corner of the property. Fluoranthene was detected in all of the surface soil samples in concentrations ranging from 1,200 to 1,300,000 ppb. Pyrene (1,100-1,000,000 ppb) and benzo (a) pyrene (920-410,000 ppb) were also detected in all of the surface soil samples. High levels other organics include phenanthrene (2,100,000 ppb), naphthalene (1,3000,000 ppb), chrysene (470,000 ppb), and endrin aldehyde (100 ppb) in NPS-SB-04-1. Fewer and lower levels of organics were detected in subsurface soil samples collected from a sand layer approximately 35 to 50 feet deep. The detected organics include tetraethyl phenanthrene in GS-SB-01-1 (est. 280 ppb), GS-SB-02-1 (est. 1,200 ppb), and GS-SB-03-3 (est. 140 ppb). Fluoranthene was detected in GS-SB-02-1 (est. 410 ppb) and GS-SB-02-2 (est. 120 ppb). The highest concentration of organics in surface soil samples is in the northwest portion of the property. The background surface soil sample CE-AB-01A contained low levels of a few organics, including phenanthrene (est.75 ppb), fluoranthene (est.160 ppb), and pyrene (est. 130 ppb).

Inorganic analytical results are presented in Table 10. The on-site surface soil samples contain several inorganics. Those detected in all of the on-site surface soil samples include arsenic (2.2 - 14.6 ppm), barium (8.4 - 82.2 ppm), chromium (7.4 - 52.4 ppm), lead (56.5 -1,310 ppm), and mercury (0.18 - 0.80 ppm). Several inorganics were detected in all of the subsurface soil samples. These include arsenic (1.7 - 8.6 ppm), barium (4.7 - 8.6 ppm), beryllium (0.15 - 0.33 ppm), chromium (7.0 -12.7 ppm), lead (1.4 est. - 3.4 ppm), and zinc (7.1 - 14.3 ppm). The background surface soil sample CE-AB-01A contained a few inorganics, including barium (58.6 ppm), chromium (10.9 ppm), and lead (est. 103 ppm).

6.5 Air Analytical Results

No formal air monitoring program was conducted. An HNu Model PI 101 Photoionization Detector (PID) was carried on site during the investigation. No readings above background were detected in the breathing zone.

6.6 Conclusions

Several organics and inorganics were detected in on-site surface and subsurface soils. Although there are no residences located on site, several workers are on site. There are approximately 596 people living within 1/4 mile of the site. Wetlands and the ranges of several threatened and endangered species are located within 4 miles of the site.

7.0 SUMMARY AND CONCLUSIONS

The Charleston Harbor Site Inspection was performed to gather the data necessary to evaluate the site for additional work and remediation. To accomplish this task, environmental samples were collected for analysis to characterize the site and potential migration pathways. In addition, information was collected to confirm target populations and environments potentially at risk from the site.

Charleston Harbor Site originally consisted of open water and marshes of the Cooper River. It was gradually filled in and had a number of uses, including shipping wharf and lumber yard.

Several organics and inorganics were detected in on-site soil and groundwater and in the nearby surface water and sediment of the Cooper River. This has a potentially adverse effect on the surrounding populations and environments through the groundwater, surface water, soil exposure, and air pathways.

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10. R. Allan Freeze and John A. Cherry, Groundwater (Prentice-Hall, Inc., Englewood Cliffs, New Jersey, 1979).

11. Stephany Fine, PSI, telephone conversation with Denise, Charleston City Water Department, April 13, 1994. Subject: Water source and distribution.

12. Stephany Fine, PSI, telephone conversation with Sherri, Mount Pleasant Water Department, April 13, 1994. Subject: Water source and distribution.

REFERENCE LIST

13. U.S. Fish and Wildlife Services, Endangered and Threatened Species of the United States (Atlanta, Georgia, 1988).

14. South Carolina Data Center of Division and Research Population Database, Collected from U.S. Bureau of the Census Data (1990).

APPENDICES

Appendix A

Radius Map

U . S . EPA REGION IV

SDMS

Unscannable Material Target Sheet

DocID: _____ Site ID: SCD980758337

Site Name: CALHOUN PARK

Nature of Material:

Map:	✓	Computer Disks:	_____
Photos:	_____	CD-ROM:	_____
Blueprints:	_____	Oversized Report:	_____
Slides:	_____	Log Book:	_____

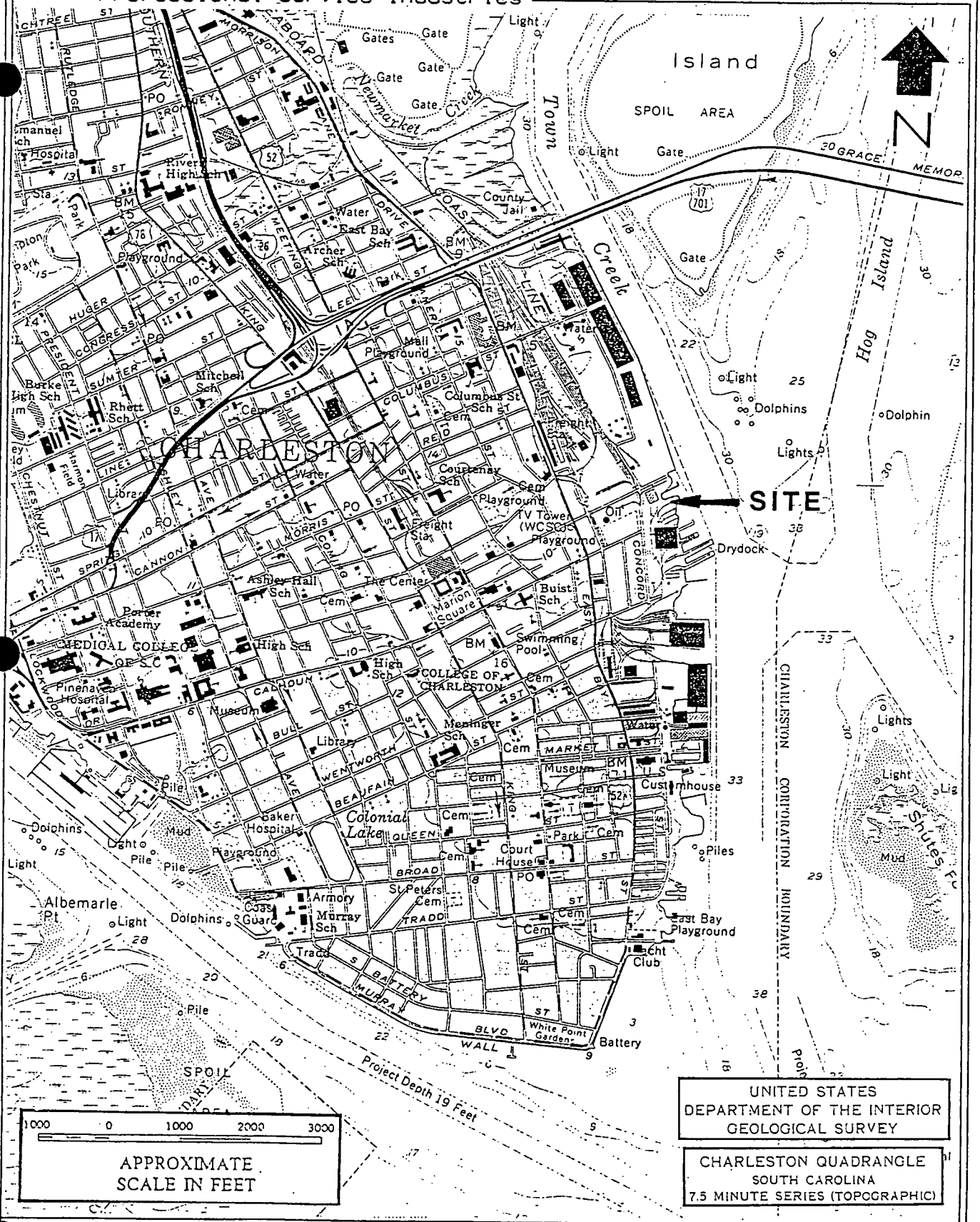
Other (describe): Black & white site map

Amount of material: 1 Map

Please contact the appropriate Records Center to view the material.

Appendix B
Figures

Professional Service Industries



PROJECT NAME

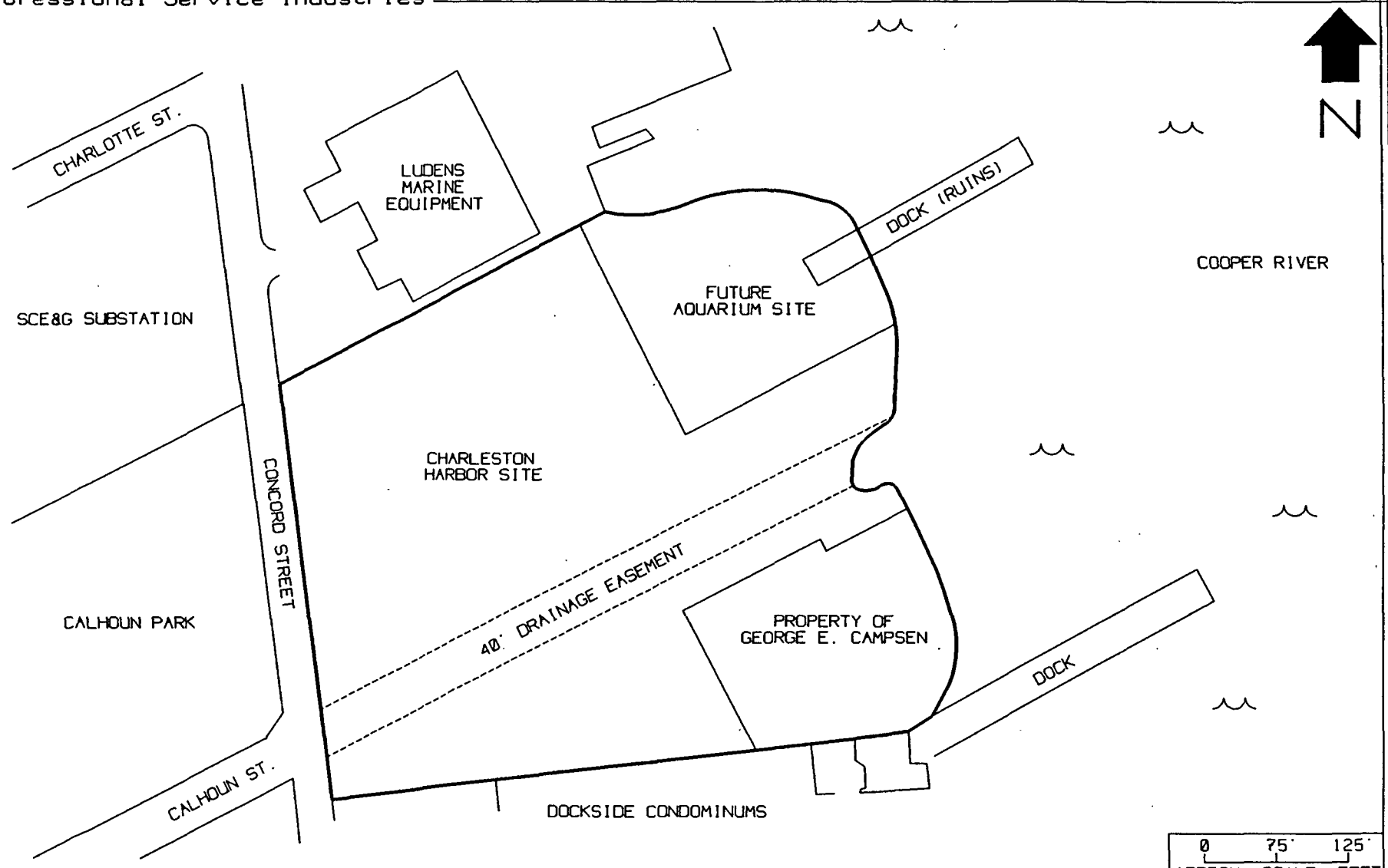
CHARLESTON HARBOR SITE
CONCORD STREET
CHARLESTON, SOUTH CAROLINA

FIGURE 1

SITE LOCATION MAP

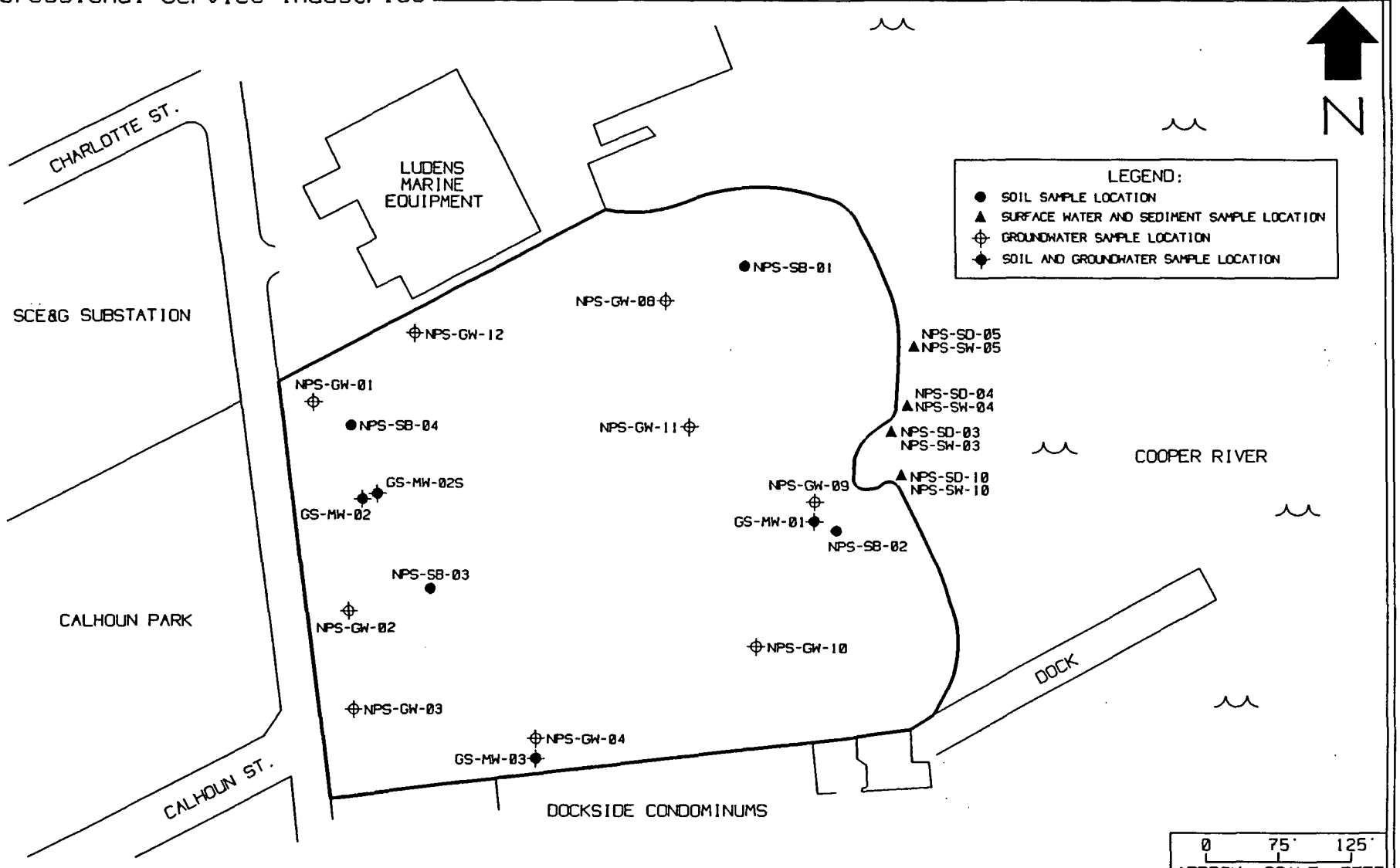
PROJECT NO.	DATE
513-44008	3-29-94

Professional Service Industries



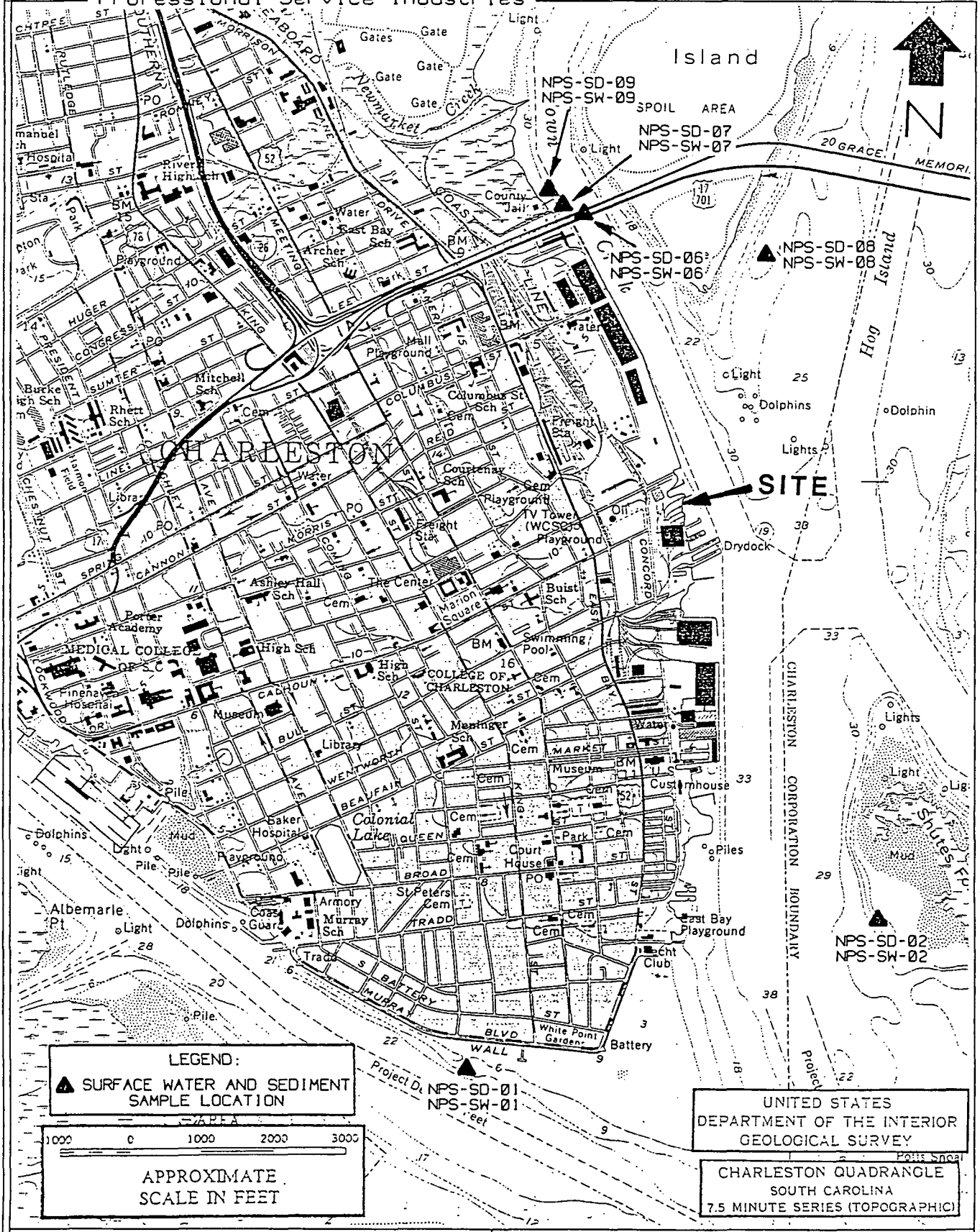
PROJECT NAME	FIGURE 2	PROJECT NO.
CHARLESTON HARBOR SITE CONCORD STREET CHARLESTON, SOUTH CAROLINA	SITE LAYOUT MAP	513-44008
		DATE 6-7-94

Professional Service Industries



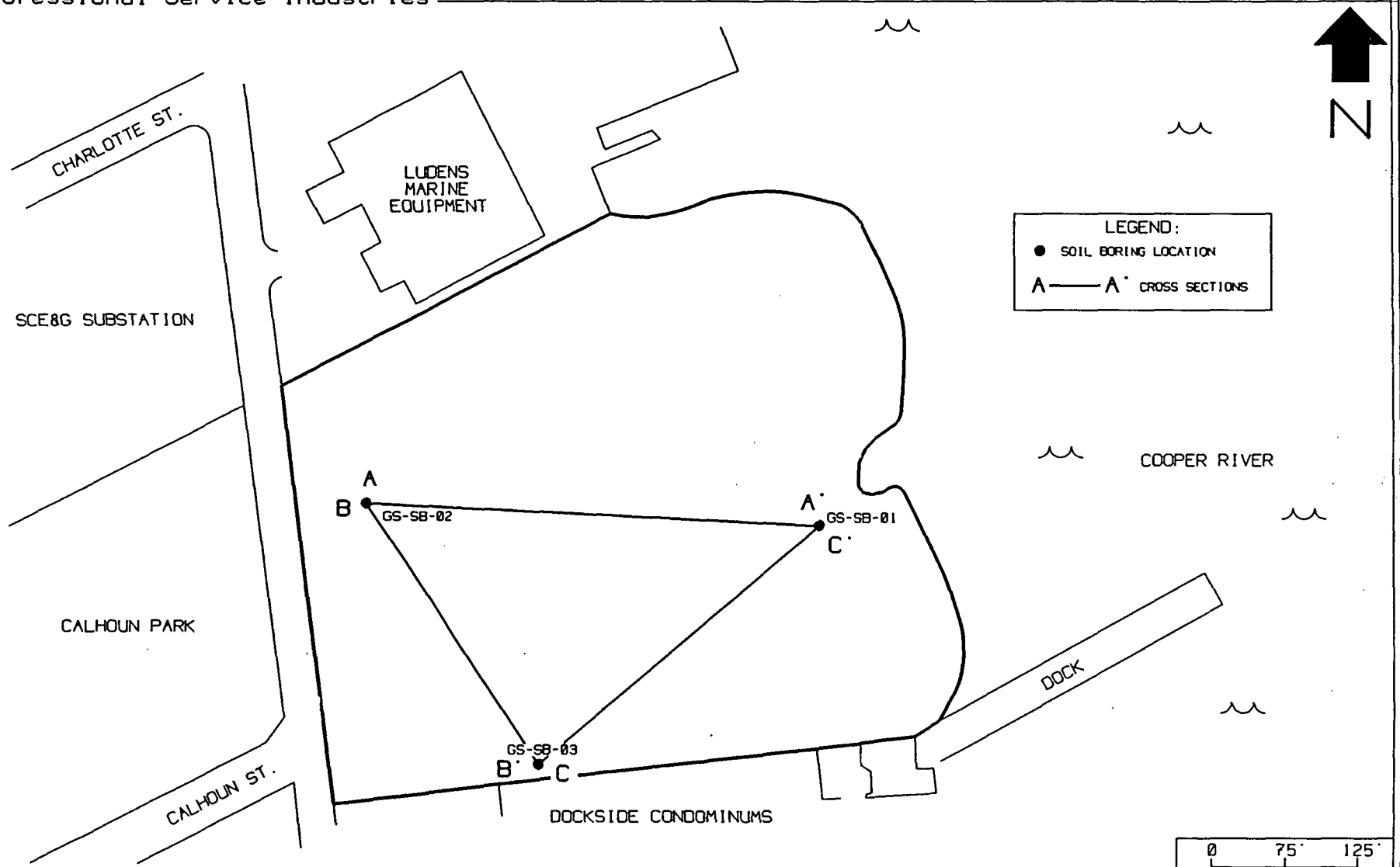
PROJECT NAME	FIGURE 3	PROJECT NO.
CHARLESTON HARBOR SITE CONCORD STREET CHARLESTON, SOUTH CAROLINA	ONSITE SAMPLE LOCATION MAP	513-44008
		DATE 3-28-94

Professional Service Industries



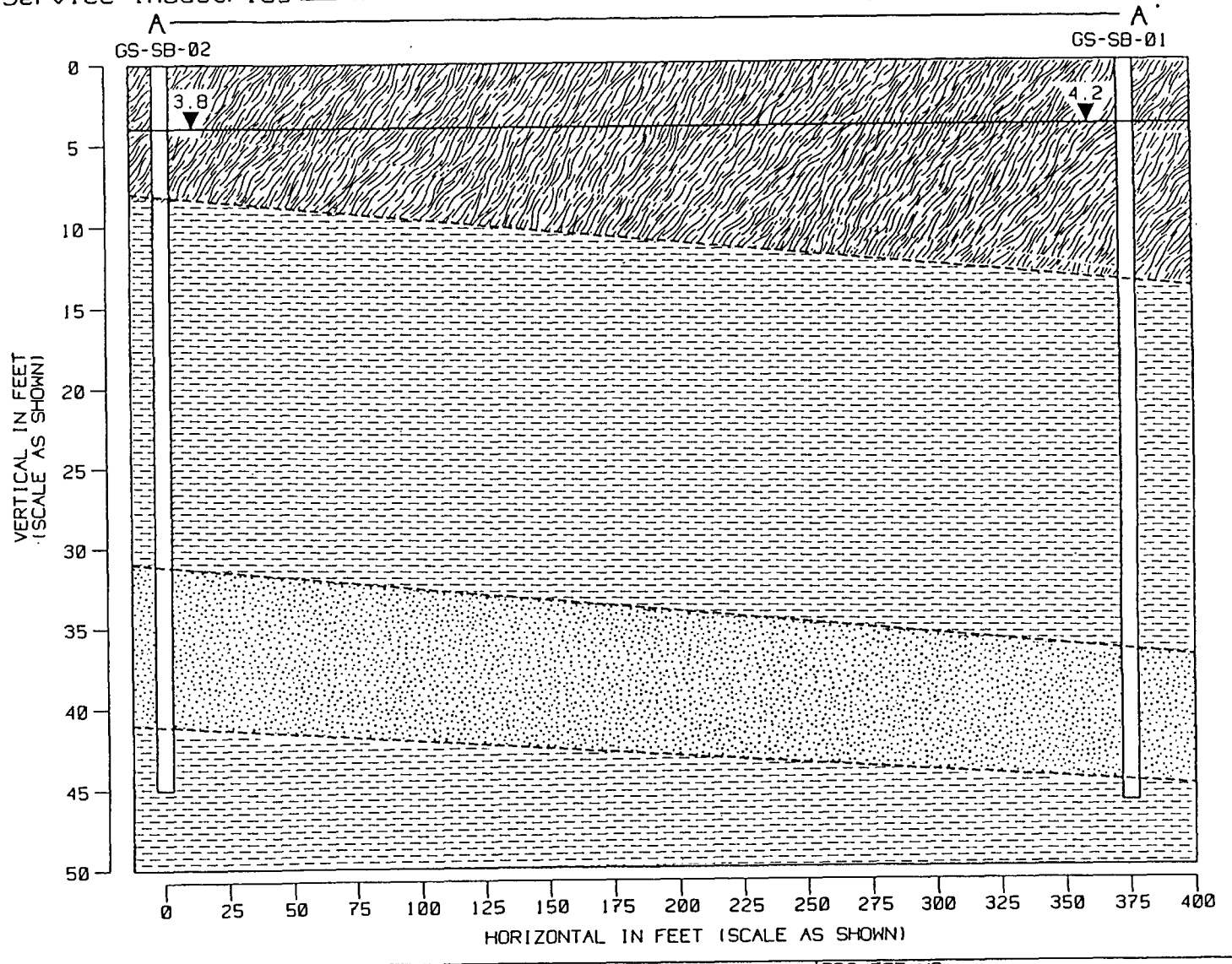
PROJECT NAME CHARLESTON HARBOR SITE CONCORD STREET CHARLESTON. SOUTH CAROLINA	FIGURE 4 OFFSITE SAMPLE LOCATION MAP
	PROJECT NO. 513-44008
	DATE 3-29-94

Professional Service Industries



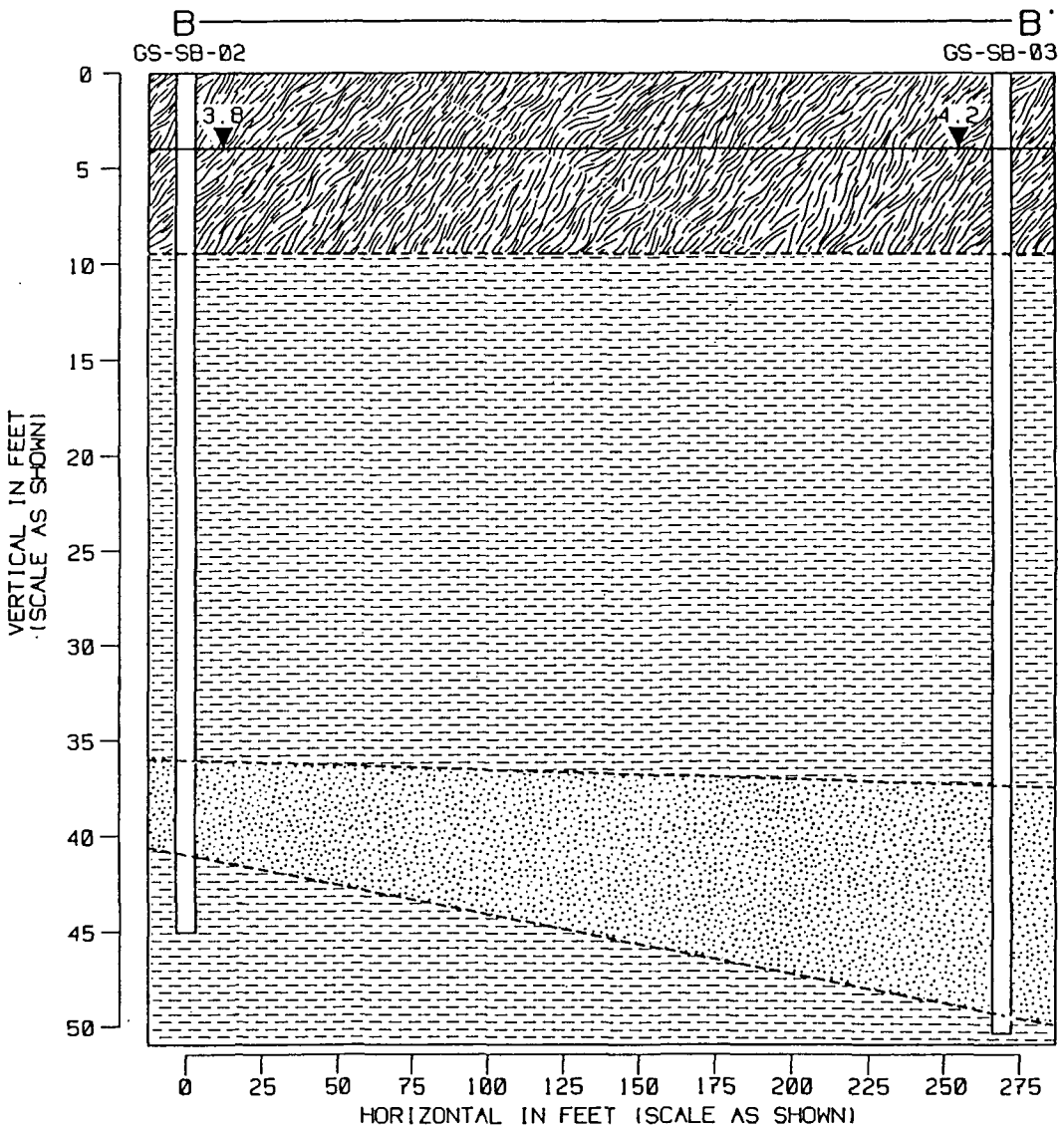
PROJECT NAME	FIGURE 5	PROJECT NO.
CHARLESTON HARBOR SITE CONCORD STREET CHARLESTON, SOUTH CAROLINA	CROSS SECTION LOCATIONS MAP	513-44008
		DATE 3-28-94

Professional Service Industries



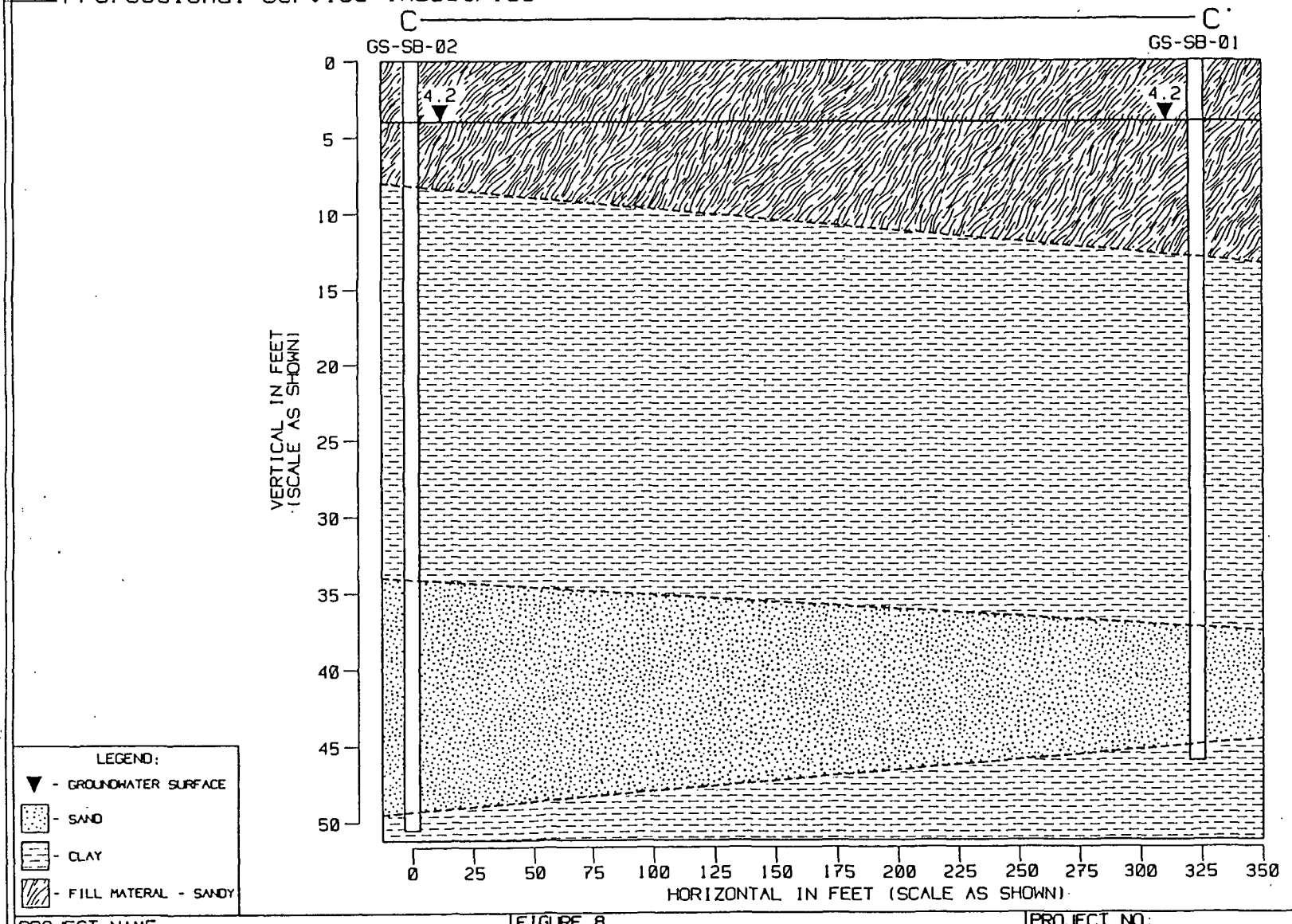
PROJECT NAME	FIGURE 6	PROJECT NO.
CHARLESTON HARBOR SITE CONCORD STREET CHARLSTON, SOUTH CAROLINA	SITE SPECIFIC GEOLOGICAL CROSS-SECTION A-A'	513-44008
		DATE 3-9-94

Professional Service Industries



PROJECT NAME	FIGURE 7	PROJECT NO.
CHARLESTON HARBOR SITE CONCORD STREET CHARLSTON, SOUTH CAROLINA	SITE SPECIFIC GEOLOGICAL CROSS-SECTION B-B'	513-44008
		DATE 3-14-94

Professional Service Industries



PROJECT NAME CHARLESTON HARBOR SITE CONCORD STREET CHARLSTON, SOUTH CAROLINA	FIGURE 8 SITE SPECIFIC GEOLOGICAL CROSS-SECTION C-C'	PROJECT NO: 513-44008 DATE 3-9-94

Appendix C

Tables

TABLE 1

SAMPLE LOCATIONS AND RATIONALE
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

Sample Number	Sample Type	Date	Location and Rationale
NPS-SB-01-1	Surface Soil	2/23/94	Collected from northeast portion of site
NPS-SB-01-2	Subsurface Soil	2/23/94	Collected at a depth of 12'to 14' from fill on northeastern part of site
NPS-SB-01-3	Subsurface Soil	2/23/94	Collected at a depth of 18'to 20' from fill on northeastern part of site
NPS-SB-02-1	Surface Soil	2/22/94	Collected from southeast portion of site
NPS-SB-02-2	Subsurface Soil	2/22/94	Collected at a depth of 8'to 10' from fill on southeastern part of site
NPS-SB-02-3	Subsurface Soil	2/22/94	Collected at a depth of 16'to 18' from fill on southeastern part of site
NPS-SB-03-1	Surface Soil	2/22/94	Collected from southwest portion of site
NPS-SB-03-2	Subsurface Soil	2/22/94	Collected at a depth of 10' to 12' from on southwestern part of site
NPS-SB-03-3	Subsurface Soil	2/22/94	Collected at a depth of 16'to 18' from fill on southwestern part of site
NPS-SB-04-1	Surface Soil	2/22/94	Collected from northwest portion of site
NPS-SB-04-2	Subsurface Soil	2/22/94	Collected at a depth of 8'to 10' from fill on northwestern part of site
NPS-SB-04-3	Subsurface Soil	2/22/94	Collected at a depth of 18' to 20' from fill on northwestern part of site
NPS-SD-01	Sediment	2/4/94	Collected from Charleston Harbor south of the city 11,000' from the site
NPS-SD-02	Sediment	2/24/94	Collected from the Cooper River downstream 7,000' from site

NPS = National Park Service
SB = Soil Boring
SD = Sediment

TABLE 1 (continued)

SAMPLE LOCATIONS AND RATIONALE
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

Sample Number	Sample Type	Date	Location and Rationale
NPS-SD-03	Sediment	2/23/94	Collected from the Cooper River at the north end of the site
NPS-SD-04	Sediment	2/23/94	Collected from the Cooper River at the northern part of the site
NPS-SD-05	Sediment	2/23/94	Collected from the Cooper River at the stormwater outlet
NPS-SD-06	Sediment	2/24/94	Collected from the Cooper River 4,500'north of site downstream from stormwater outlet
NPS-SD-07	Sediment	2/24/94	Collected from the Cooper River 4,500' north of site at stormwater outlet
NPS-SD-08	Sediment	2/24/94	Collected 4,000'north of site east of Drum Island
NPS-SD-09	Sediment	2/24/94	Collected from Cooper River 4,500' north of site upstream from stormwater outlet
NPS-SD-10	Sediment	2/24/94	Collected from the Cooper River at the southern part of the site
NPS-SW-01	Surface Water	2/24/94	Collected from Charleston Harbor south of the city 11,000' from site
NPS-SW-02	Surface Water	2/24/94	Collected from the Cooper River downstream 7,000' from site
NPS-SW-03	Surface Water	2/23/94	Collected from the Cooper River at the north end of the site
NPS-SW-04	Surface Water	2/23/94	Collected from the River at the northern part of the site

NPS = National Park Service
SD = Sediment
SW = Surface Water

TABLE 1 (continued)

SAMPLE LOCATIONS AND RATIONALE
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

Sample Number	Sample Type	Date	Location and Rationale
NPS-SW-05	Surface Water	2/23/94	Collected from the Cooper river at the stormwater outlet
NPS-SW-06	Surface Water	2/24/94	Collected from Cooper River 4,500' north or site downstream from stormwater outlet
NPS-SW-07	Surface Water	2/24/94	Collected from the Cooper River 4,500'north of site at stormwater outlet
NPS-SW-08	Surface Water	2/24/94	Collected from Cooper River 4,000' north of site east of Drum Island
NPS-SW-09	Surface Water	2/24/94	Collected from Cooper river 4,500' north of site upstream from stormwater outlet
NPS-SW-10	Surface Water	2/23/94	Collected from the Cooper River at the southern part of the site
NPS-GW-01	Groundwater	2/24/94	Collected from 14.5' well located near northwest corner of site
NPS-GW-02	Groundwater	2/23/94	Collected from 14.7' well located near eastern boundary of site
NPS-GW-03	Groundwater	2/23/94	Collected from 18.4' well located near southwestern corner of site
NPS-GW-04	Groundwater	2/23/94	Collected from 16.3' well located near southern boundary of site
NPS-GW-08	Groundwater	2/24/94	Collected from 30.0' well located near northwestern corner of site

NPS = National Park Service
GW = Groundwater
SW = Surface Water

TABLE 1 (continued)

SAMPLE LOCATIONS AND RATIONALE
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

Sample Number	Sample Type	Date	Location and Rationale
NPS-GW-09	Groundwater	2/24/94	Collected from 20.7'well located near stormwater outlet
NPS-GW-10	Groundwater	2/23/94	Collected from 19.2' well located near southeastern corner of site
NPS-GW-11	Groundwater	2/24/94	Collected from 24.9' well located on east-central part of site
NPS-GW-12	Groundwater	2/24/94	Collected at a depth of 19.3' located near the northern boundary of the site
GS-SB-01-1	Subsurface Soil	11/20/93	Collected at a depth of 38'to 40' from sand at the eastern part of site
GS-SB-01-2	Subsurface Soil	11/20/93	Collected at a depth of 40'to 42' from sand at the eastern part of the site
GS-SB-01-3	Subsurface Soil	11/19/93	Collected at a depth of 42'to 44' from sand at the eastern part of the site
GS-SB-02-1	Subsurface Soil	11/19/93	Collected at a depth of 31' to 33' from sand at the western part of the site
GS-SB-02-2	Subsurface Soil	11/19/93	Collected at a depth of 35' to 37' from sand at the western part of the site
GS-SB-02-3	Subsurface Soil	11/19/93	Collected at a depth of 37 to 39' from sand at the western part of the site
GS-SB-02S	Subsurface Soil	11/17/93	Collected at a depth of 8'to 12' from fill at the western part of the site
GS-SB-03-1	Subsurface Soil	11/22/93	Collected at a depth of 33'to 35' from sand at the southern part of the site

NPS = National Park Service
GW = Groundwater
SB = Soil Boring
GS = U.S. Geological Survey

TABLE 1 (continued)

SAMPLE LOCATIONS AND RATIONALE
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

Sample Number	Sample Type	Date	Location and Rationale
GS-SB-03-2	Subsurface Soil	11/22/93	Collected at a depth of 35-37' from sand at the southern part of the site
GS-SB-03-3	Subsurface Soil	11/22/93	Collected at a depth of 37-39' from sand at the southern part of the site
GS-MW-01-1	Groundwater	11/21/93	Collected from top of well screen (36') from well located on eastern part of site
GS-MW-01-2	Groundwater	11/21/93	Collected from bottom of well screen (46') from well located eastern part of site
GS-MW-02-1	Groundwater	11/21/93	Collected from top of well screen (34') from well location on western part of site
GS-MW-02-2	Groundwater	11/21/93	Collected from bottom of well screen (42)' from well location on western part of site
GS-MW-02S	Groundwater	11/21/93	Collected from 13' well located on western part of site
GS-MW-03-1	Groundwater	11/23/93	Collected from top of well screen (40') from well located on southern part of site
GS-MW-03-2	Groundwater	11/23/93	Collected from bottom of well screen (50') from well located on southern part of site

GS = U.S. Geological Survey
SB = Soil Boring
MW = Monitoring Well

TABLE 1 (continued)

SAMPLE LOCATIONS AND RATIONALE
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

Sample Number	Sample Type	Date	Location and Rational
CE-BG-01A	Groundwater	1/6/94	Collected from off site, shallow well 1,075' west of the site
CE-BG-01D	Groundwater	1/6/94	Collected from off site, deep well 1,075' west of the site
CE-AB-01-A	Surface Soil	11/3/93	Collected in background location 1,275' southwest of the site.

GS = U.S. Geological Survey
CE = Chester Environmental
MW = Monitoring Well
BG = Background Well
AB = Surface Soil Background

TABLE 2

FIELD MEASUREMENTS FOR WATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA
FEBRUARY 1994

Sample Number	pH	Temp. (°C)	Cond. (mmhos/cm)	Dissolved 0^2 (ppm)
GS-MW-01	7.48	20.4	5.11 X 1000	--
GS-MW-02	6.58	22.7	1.68 X 1000	--
GS-MW-02S	7.13	19.7	2.68 X 1000	--
GS-MW-03	8.06	18.2	>10,000	--
NPS-GW-01	6.77	17.7	--	1.4
NPS-GW-02	7.48	22.0	--	0.3
NPS-GW-03	6.30	22.2	--	0.2
NPS-GW-04	7.21	18.5	--	0.3
NPS-GW-08	7.00	16.6	--	1.7
NPS-GW-09	7.71	23.4	--	0.1
NPS-GW-10	7.90	17.9	--	0.9
NPS-GW-11	6.51	18.5	--	0.1
NPS-GW-12	6.95	16.6	--	1.1
NPS-SW-01	6.21	19.7	--	6.1
NPS-SW-02	6.35	19.5	--	6.8
NPS-SW-03	7.22	--	--	5.7
NPS-SW-03D	6.81	--	--	5.5
NPS-SW-04	7.52	--	--	7.2
NPS-SW-05	7.57	--	--	7.0
NPS-SW-06	6.80	18.8	--	5.9
NPS-SW-07	6.34	22.4	--	6.5
NPS-SW-08	6.80	25.3	--	6.0
NPS-SW-09	6.28	23.1	--	6.5
NPS-SW-10	--	--	--	--

- = Measurement not taken

psi

TABLE 3

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-01-2 12-14'	NPS-SB-01-3 18-20'	NPS-SB-02-2 8-10'
Methylene Chloride	11B	20B	120B
Acetone	22B	35B	550B
1,2 - Dichloroethane	12U	--	--
Beta - BHC	2.1U	--	--
Delta - BHC	2.1U	--	--
Gamma - BHC	2.1U	--	--
Heptachlor	2.1U	--	--
Aldrin	2.1U	--	1.4JP
Heptachlor Epoxide	2.1U	--	1.9J
Endosulfan I	2.1U	--	--
Dieldrin	4.1U	--	--
Endrin	4.1U	--	1.8JP
4,4 - DDD	4.1U	--	--
Endosulfan Sulfate	4.1U	--	--
Endrin Aldehyde	4.1U	--	--
Acenaphthene	410U	--	46,000
Fluorene	410U	--	37,000
Phenanthrene	410U	--	110,000
Anthracene	410U	--	59,000
Di-n-Butylpthalate	410U	--	--
Fluoranthane	410U	--	78,000J
Pyrene	410U	--	57,000J
Bezo (a) anthracene	410U	--	28,000
Chrysene	410U	--	21,000

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-02-3 16-18'	NPS-SB-03-2 10-12'	NPS-SB-03-3 16-18'
Methylene Chloride	46B	120B	49B
Acetone	350JB	500JB	140B
1,2 - Dichloroethane	--	--	--
Beta - BHC	--	--	--
Delta - BHC	--	--	--
Gamma - BHC	--	--	--
Heptachlor	0.75JP	--	--
Aldrin	0.28JP	0.61J	--
Heptachlor Epoxide	--	0.47JP	0.31JP
Endosulfan I	--	--	--
Dieldrin	--	0.40JP	--
Endrin	--	--	--
4,4 - DDD	--	--	--
Endosulfan Sulfate	--	--	--
Endrin Aldehyde	--	--	--
Acenaphthene	11,000J	230J	390J
Fluorene	12,000J	100J	1,000
Phenanthrene	35,000J	260J	3,600
Anthracene	9,700J	66J	810
Di-n-Butylphthalate	--	180JB	190JB
Fluoranthane	14,000J	380J	2,100
Pyrene	12,000J	360J	2,000
Benzo (a) anthracene	8,700J	300J	1,100
Chrysene	11,000J	150J	530J

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-04-2 8-10'	NPS-SB-04-3 18-20'	GS-SB-02S 8-12'
Methylene Chloride	150B	51B	39B
Acetone	310B	120B	190
1,2 - Dichloroethane	--	--	36
Beta - BHC	--	--	1.2JP
Delta - BHC	22P	--	1.3J
Gamma - BHC	--	1.1JP	0.20JPB
Heptachlor	13J	--	0.17JPB
Aldrin	--	--	0.28JPB
Heptachlor Epoxide	--	--	0.20JP
Endosulfan I	--	--	0.91JP
Dieldrin	--	--	.032JP
Endrin	--	--	2.8J
4,4 - DDD	220P	--	0.24JP
Endosulfan Sulfate	90P	4.6J	1.3JP
Endrin Aldehyde	140P	--	0.76J
Acenaphthene	850,000	2,500	270J
Fluorene	1,100,000	4,900	120J
Phenanthrene	2,700,000J	16,000J	540J
Anthracene	560,000	4,600	150J
Di-n-Butylphthalate	--	170JB	96J
Fluoranthane	1,600,000	11,000J	640J
Pyrene	1,400,000	7,600J	510J
Benzo (a) anthracene	900,000	4,300	290J
Chrysene	590,000	2,800	240J

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-01-2 12-14'	NPS-SB-01-3 18-20'	NPS-SB-02-2 8-10'
Benzo (a) pyrene	410U	--	13,000
Indeno (1,2,3-cd)-pyrene	410U	--	6,100
Benzo (g,h,i) perylene	410U	--	6,300
Tetrachloroethane	120J	--	--
Cyclohexenone	410U	--	--
1-Methylnapthalene	410U	--	15,000
Dimethylnapthalene	410U	--	11,000
Xylene	12U	3J	10J
2-Butanone	410U	--	18J
1,1,2 - Trichlorethane	410U	--	7J
2 - Hexanone	410U	--	13J
Carbon Disulfide	410U	--	--
Trimethylbenzene	410U	--	--
Ethenylmethyl benzene	410U	--	--
Benzene	12U	--	--
Toluene	12U	--	--
Ethylbenzene	410U	--	--
Ethylmethylbenzene	410U	--	--
Aldol	160J	180J	--
Napthalene	410U	--	5000J
2-Methylnapthalene	410U	--	7,600
Acenaphthylene	410U	--	2,500J
Dibenzofuran	410U	--	17,000
N-Nitro sodiphenylamine	410U	--	5,700

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-02-3 16-18'	NPS-SB-03-2 10-12'	NPS-SB-03-3 16-18'
Benzo (a) pyrene	7,400J	190J	580J
Indeno (1,2,3-cd -pyrene	3,700	120J	300J
Benzo (g,h,i) perylene	1,900	--	100J
Tetrachloroethane	--	190J	--
Cyclohexenone	--	140J	--
1-Methylnapthalene	5,500J	--	830J
Dimethylnapthalene	5,000	190J	360J
Xylene	7J	--	--
2-Butanone	--	34	2J
1,1,2 - Trichlorethane	--	--	--
2 - Hexanone	--	--	--
Carbon Disulfide	3J	4J	5J
Trimethylbenzene	8J	--	--
Ethenylmethyl benzene	23J	--	--
Benzene	--	--	--
Toluene	--	--	--
Ethylbenzene	--	--	--
Ethylmethylbenzene	--	--	--
Aldol	--	140J	300J
Napthalene	2,700	--	4,600
2-Methylnaphthalene	4,100	--	1,400
Acenaphthylene	2,200	--	460J
Dibenzofuran	8,800J	110J	790
N-Nitro sodiphenylamine	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-04-2 8-10'	NPS-SB-04-3 18-20'	GS-SB-02S 8-12'
Benzo (a) pyrene	480,000	2,800	160J
Indeno (1,2,3-cd -pyrene	310,000	1,400	85J
Benzo (g,h,i) perylene	230,000	700J	76J
Tetrachloroethane	--	--	280J
Cyclohexenone	--	--	280JB
1-Methylnapthalene	790,000	3,600J	280J
Dimethylnapthalene	440,000J	1,600J	210J
Xylene	660	84	--
2-Butanone	--	--	--
1,1,2 - Trichlorethane	--	--	--
2 - Hexanone	--	--	--
Carbon Disulfide	--	6J	--
Trimethylbenzene	140J	25J	--
Ethenylmethyl benzene	--	62J	--
Benzene	44J	15J	--
Toluene	77J	22	--
Ethylbenzene	110	15J	--
Ethylmethylbenzene	200J	--	--
Aldol	--	--	--
Naphthalene	3,000,000J	14,000J	--
2-Methylnaphthalene	1,500,000	7,500J	--
Acenaphthylene	170,000J	1,300	--
Dibenzofuran	680,000	3,900	--
N-Nitrosodiphenylamine	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-01-2 12-14'	NPS-SB-01-3 18-20'	NPS-SB-02-2 8-10'
Carbazole	410U	--	23,000
Dibenz (a,h) anthracene	410U	--	2,100J
Ethylnapthalene	410U	--	6,500
Dibenzothiophene	410U	--	7,100J
Phenol	410U	--	--
Methylanthracene	410U	--	--
Tetramethylphenanthrene	410	--	--
Benzofluorene	410U	--	--
Bis (2-ethylhexyl) phthalate	410U	--	--
Dibenz (a,h) anthracene	410U	--	--
Ethenylnaphthalene	410U	--	--
Timethylbenzene	410U	--	--
Methylindene	410U	--	--
Benzothiophene	410U	--	--
Methylfluorene	410U	--	--
2, 4 - Dimethylphenol	410U	--	--
Biphenyl	410U	--	--
2-Phenyl-Naphthalene	410U	--	--
Methoxychlor	2.3J	--	--
4,4 - DDE	4.1U	--	23J
Endosulfan II	4.1U	--	15JP
4,4 - DDT	4.1U	--	--
Gamma- Chlordane	2.1U	--	--
Alpha-BHC	2.1U	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-02-3 16-18'	NPS-SB-03-2 10-12'	NPS-SB-03-3 16-18'
Carbazole	3,500	--	340J
Dibenz (a,h) anthracene	1,300	--	--
Ethylnapthalene	--	--	--
Dibenzothiophene	--	--	300J
Phenol	68J	--	--
Methylanthracene	4,600	--	--
Tetramethylphenanthrene	30,000	--	--
Benzofluorene	8,100	--	--
Bis (2-ethylhexyl) phthalate	--	89J	--
Dibenz (a,h) anthracene	--	--	81J
Ethenylnaphthalene	--	--	240J
Timethylbenzene	--	--	--
Methylindene	--	--	--
Benzothiophene	--	--	--
Methylfluorene	--	--	--
2, 4 - Dimethylphenol	--	--	--
Biphenyl	--	--	--
2-Phenyl-Naphthalene	--	--	--
Methoxychlor	--	4.4JPB	--
4,4 - DDE	9.8P	0.29JP	--
Endosulfan II	--	0.81JP	--
4,4 - DDT	2.4JP	--	--
Gamma- Chlordane	1.7JP	--	--
Alpha-BHC	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-04-2 8-10'	NPS-SB-04-3 18-20'	GS-SB-02S 8-12'
Carbazole	330,000	2,100	--
Dibenz (a,h) anthracene	--	--	--
Ethylnapthalene	220,000J	860J	--
Dibenzothiophene	220,000J	1,100J	--
Phenol	--	--	--
Methylanthracene	350,000J	1,400J	-
Tetramethylphenanthrene	--	--	--
Benzofluorene	220,000J	4,500J	--
Bis (2-ethylhexyl) phthalate	44,000J	--	--
Dibenz (a,h) anthracene	100,000J	380J	--
Ethenylnaphthalene	--	--	--
Timethylbenzene	220,000J	--	--
Methylindene	250,000J	--	--
Benzothiophene	190,000J	1,100J	--
Methylfluorene	250,000	940J	--
2, 4 - Dimethylphenol	--	190J	--
Biphenyl	--	1,000J	--
2-Phenyl-Naphthalene	--	720J	--
Methoxychlor	--	100	--
4,4 - DDE	--	3.7JP	--
Endosulfan II	--	--	--
4,4 - DDT	--	--	--
Gamma- Chlordane	--	0.66J	--
Alpha-BHC	4.4JP	--	-

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-01-2 12-14'	NPS-SB-01-3 18-20'	NPS-SB-02-2 8-10'
Endrin Keytone	4.1U	--	--
Alpha-Chlordane	2.1U	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-02-3 16-18'	NPS-SB-03-2 10-12'	NPS-SB-03-3 16-18'
Endrin Keytone	--	--	--
Alpha-Chlordane	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 3 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HABOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-04-2 8-10'	NPS-SB-04-3 18-20'	NPS-SB-02S 8-12'
Endrin Keytone	130	--	--
Alpha-Chlordane	17P	3.7P	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 4

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (mg/kg)	NPS-SB-01-2 12-14'	NPS-SB-01-3 18-20'	NPS-SB-02-2 8-10'	NPS-SB-02-3 16-18'
Aluminum	11,500	15,200	20,300	9820
Antimony	--	--	--	--
Arsenic	3.6	12.2	15.5	10.1
Barium	21.8B	22.2B	74.9	59.1B
Beryllium	--	--	--	--
Cadmium	--	--	--	--
Calcium	283B	21,700	10,700	16,400
Chromium	14.6	28.9	32.1	18.3
Cobalt	--	5.9B	6.7B	3.9B
Copper	--	8.9	83.5	27.0
Cyanide	--	--	--	--
Iron	10,200	21,000	25,300	14,300
Lead	6.3	15.4	235	112
Magnesium	856B	5,420	3,480	2,710
Manganese	15.5	280	220	165
Mercury	--	--	1.3	0.27
Nickel	--	--	12.6B	--
Potassium	713B	2510	1590B	1,390B
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	1330	5660	2530	2,410
Thallium	--	--	--	--
Vanadium	16.7	39.8	63.7	29.5
Zinc	7.6	31.0	410	98.9

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

psi

TABLE 4 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (mg/kg)	NPS-SB-03-2 10-12'	NPS-SB-03-3 16-18'	NPS-SB-04-2 8-10'	NPS-SB-04-3 18-20'
Aluminum	6100	17,400	12,100	18,900
Antimony	--	--	--	--
Arsenic	10.3	12.6	13.9	15.1
Barium	158	20.0B	23.6B	22.1B
Beryllium	--	--	--	--
Cadmium	--	--	--	--
Calcium	34,300	19,700	13,300	13,700
Chromium	15.8	32.3	23.8	38.6
Cobalt	8.5B	6.0B	4.9B	7.4B
Copper	120	7.5B	21.4	11.0
Cyanide	--	--	3.2	--
Iron	17,400	21,200	23,000	25,100
Lead	361	11.0	22.8	5.3
Magnesium	3,500	5,710	4,080	6,900
Manganese	248	146	222	207
Mercury	0.67	--	0.42	--
Nickel	19.1	--	--	--
Potassium	1,900	3,100	2,320	3,860
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	1,950	6,260	4,360	9,910
Thallium	--	--	--	--
Vanadium	33.7	38.5	36.8	44.5
Zinc	260	30.6	49.3	38.8

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

TABLE 4 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOURCE SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (mg/kg)	GS-SB-02S 8-12'
Aluminum	28,600
Antimony	--
Arsenic	33.0
Barium	31.4B
Beryllium	1.6B
Cadmium	--
Calcium	2,740
Chromium	52.7
Cobalt	10.1B
Copper	11.2
Cyanide	--
Iron	28,500
Lead	16.0J
Magnesium	6,370
Manganese	234
Mercury	--
Nickel	15.3B
Potassium	3,800
Selenium	--
Silver	--
Sodium	5,490J
Thallium	--
Vanadium	57.0
Zinc	56.2

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

TABLE 5

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	CE-BG-01A	CE-BM-01D	GS-MW-01-1
Carbon Disulfide	10U	--	3J
Xylene	10U	--	4J
Chloroform	10U	--	--
Methylene Chloride	10U	--	--
Acetone	10U	--	--
2,4 - Dimethylphenol	10U	--	3J
Naphthalene	10U	--	5J
Acenaphthene	10U	--	2J
Bis (2-ethylhexyl) phthalate	10U	--	6JB
Benzothiophene	10U	--	2J
Trimethylphenol	10U	--	4J
Acenaphthylene	10U	--	--
Fluoranthene	10U	--	--
Pyrene	10U	--	--
Dimethylnaphthalene	10U	--	--
Beta - BHC	0.05U	--	--
Heptachlor	0.05U	--	0.019JP
Endosulfan Sulfate	0.1U	--	--
Endrin Aldehyde	0.1U	--	--
Alpha Chlordane	0.05U	--	--
Benzene	10U	--	--
Gamma - Chlordane	0.05U	--	--
Heptachlor Epoxide	0.05U	--	--
Dieldrin	0.1U	--	-

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-01-2	GS-MW-02-1	GS-MW-02-2
Carbon Disulfide	2J	--	--
Xylene	5J	--	--
Chloroform	--	1J	1J
Methylene Chloride	--	--	--
Acetone	--	--	--
2,4 - Dimethylphenol	4J	--	--
Naphthalene	5J	--	--
Acenaphthene	2J	1J	1J
Bis (2-ethylhexyl) phthalate	13B	3JB	10B
Benzothiophene	--	--	--
Trimethylphenol	3J	--	--
Acenaphthylene	--	--	--
Fluoranthene	--	--	--
Pyrene	--	--	--
Dimethylnaphthalene	--	--	--
Beta - BHC	--	--	--
Heptachlor	--	0.013JP	--
Endosulfan Sulfate	--	--	--
Endrin Aldehyde	--	--	--
Alpha Chlordane	--	--	--
Benzene	--	--	--
Gamma - Chlordane	--	--	--
Heptachlor Epoxide	--	--	--
Dieldrin	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-02S	GS-MW-03-1	GS-MW-03-2
Carbon Disulfide	--	2J	3J
Xylene	--	--	--
Chloroform	2J	--	--
Methylene Chloride	1JB	1JB	1JB
Acetone	15	--	6J
2,4 - Dimethylphenol	--	--	--
Naphthalene	--	2J	3J
Acenaphthene	15	--	--
Bis (2-ethylhexyl) phthalate	3JB	7JB	4JB
Benzothiophene	--	--	--
Trimethylphenol	--	--	--
Acenaphthylene	5J	--	--
Fluoranthene	2J	--	--
Pyrene	2J	--	--
Dimethylnaphthalene	5J	--	--
Beta - BHC	0.015JP	--	--
Heptachlor	0.0099JP	0.0375P	0.085P
Endosulfan Sulfate	0.012JP	--	--
Endrin Aldehyde	0.0087J	--	--
Alpha Chlordane	0.0029JP	--	--
Benzene	--	--	--
Gamma - Chlordane	--	--	--
Heptachlor Epoxide	--	--	--
Dieldrin	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-01	NPS-GW-02	NPS-GW-03
Carbon Disulfide	--	--	--
Xylene	19	--	--
Chloroform	--	--	--
Methylene Chloride	3JB	4J	1J
Acetone	-	--	--
2,4 - Dimethylphenol	3J	--	--
Naphthalene	110J	--	1J
Acenaphthene	22	--	5J
Bis (2-ethylhexyl) phthalate	--	3JB	2JB
Benzothiophene	--	--	--
Trimethylphenol	--	--	--
Acenaphthylene	2J	--	2J
Fluoranthene	10	--	3J
Pyrene	6J	--	3J
Dimethylnaphthalene	--	--	--
Beta - BHC	0.023JP	--	--
Heptachlor	--	--	--
Endosulfan Sulfate	--	--	0.024JP
Endrin Aldehyde	--	--	--
Alpha Chlordane	--	--	--
Benzene	69	--	--
Gamma - Chlordane	0.0050JP	--	--
Heptachlor Epoxide	--	--	--
Dieldrin	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-04	NPS-GW-08	NPS-GW-09
Carbon Disulfide	--	--	--
Xylene	1JB	21	2JB
Chloroform	--	--	--
Methylene Chloride	--	8JB	9J
Acetone	--	--	--
2,4 - Dimethylphenol	--	--	2J
Naphthalene	--	73	18
Acenaphthene	--	10	57
Bis (2-ethylhexyl) phthalate	--	--	1JB
Benzothiophene	--	11J	--
Trimethylphenol	--	--	--
Acenaphthylene	--	1J	--
Fluoranthene	--	1J	11
Pyrene	--	1J	7J
Dimethylnaphthalene	--	4J	--
Beta - BHC	--	--	--
Heptachlor	0.0041JP	--	--
Endosulfan Sulfate	0.014J	--	--
Endrin Aldehyde	--	--	--
Alpha Chlordane	--	--	--
Benzene	--	15	--
Gamma - Chlordane	--	0.0091JP	--
Heptachlor Epoxide	--	--	--
Dieldrin	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-10	NPS-GW-11	NPS-GW-12
Carbon Disulfide	2J	--	--
Xylene	--	30	100
Chloroform	--	--	--
Methylene Chloride	8J	2JB	9JB
Acetone	--	--	--
2,4 - Dimethylphenol	--	6J	6J
Naphthalene	--	220J	180J
Acenaphthene	--	130J	45
Bis (2-ethylhexyl) phthalate	2JB	--	--
Benzothiophene	--	--	--
Trimethylphenol	--	--	--
Acenaphthylene	--	6J	6J
Fluoranthene	--	14	13
Pyrene	--	12	10
Dimethylnaphthalene	--	--	--
Beta - BHC	--	0.039JP	--
Heptachlor	--	--	--
Endosulfan Sulfate	0.0063JP	--	--
Endrin Aldehyde	--	--	--
Alpha Chlordane	0.0043J	0.015J	--
Benzene	--	7J	92
Gamma - Chlordane	--	--	--
Heptachlor Epoxide	--	--	0.0068JP
Dieldrin	--	--	0.0078JP

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	CE-BG-01A	CE-BM-01D	GS-MW-01-1
4, 4 - DDE	0.1U	--	--
Endrin	0.1U	--	--
4,4 - DDD	0.1U	--	--
Methoxychlor	0.5U	--	--
Gamma - BHC	0.05U	--	--
Endrin Ketone	0.01U	--	--
4,4 - DDT	0.1U	--	--
Toluene	10U	--	--
Ethylbenzene	10U	--	--
Trimethylbenzene	10U	--	--
Chlorobenzene	10U	--	--
Ethylenmethylbenzene	10U	--	--
Ethenylmethylbenzene	10U	--	--
2-Methylnaphthalene	10U	--	--
Dibenzofuran	10U	--	--
Fluorene	10U	--	--
Pentachlorophenol	10U	--	--
Phenanthrene	10U	--	--
Carbazole	10U	--	--
Dihydrobenzothiophene	10U	--	--
1-Methylnaphthalene	10U	--	--
Ethenylnaphthalene	10U	--	--
Phenol	10U	--	--
Anthracene	10U	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-01-2	GS-MW-02-1	GS-MW-02-2
4, 4 - DDE	--	--	--
Endrin	--	--	--
4,4 - DDD	--	--	--
Methoxychlor	--	--	--
Gamma - BHC	--	--	--
Endrin Ketone	--	--	--
4,4 - DDT	--	--	--
Toluene	--	--	--
Ethylbenzene	--	--	--
Trimethylbenzene	--	--	--
Chlorobenzene	--	--	--
Ethylmethylbenzene	--	--	--
Ethenylmethylbenzene	--	--	--
2 - Methylnaphthalene	--	--	--
Dibenzofuran	--	--	--
Fluorene	--	--	--
Pentachlorophenol	--	--	--
Phenanthrene	--	--	--
Carbazole	--	--	--
Dihydrobenzothiophene	--	--	--
1-Methylnaphthalene	--	--	--
Ethenylnaphthalene	--	--	--
Phenol	--	--	--
Anthracene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-02S	GS-MW-03-1	GS-MW-03-2
4, 4 - DDE	--	--	--
Endrin	--	--	--
4,4 - DDD	--	--	--
Methoxychlor	--	--	--
Gamma - BHC	--	--	--
Endrin Ketone	--	--	--
4,4 - DDT	--	--	--
Toluene	--	--	--
Ethylbenzene	--	--	--
Trimethylbenzene	--	--	--
Chlorobenzene	--	--	--
Ethylmethylbenzene	--	--	--
Ethenylmethylbenzene	--	--	--
2-Methylnaphthalene	--	--	--
Dibenzofuran	--	--	--
Fluorene	--	--	--
Pentachlorophenol	--	--	--
Phenanthrene	--	--	--
Carbazole	--	--	--
Dihydrobenzothiophene	--	--	--
1-Methylnaphthalene	--	--	--
Ethenylnaphthalene	--	--	--
Phenol	--	--	--
Anthracene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-04	NPS-GW-08	NPS-GW-09
4, 4 - DDE	--	--	--
Endrin	--	--	--
4,4 - DDD	--	--	--
Methoxychlor	--	--	--
Gamma - BHC	--	--	--
Endrin Ketone	--	--	--
4,4 - DDT	--	--	--
Toluene	--	5J	--
Ethylbenzene	--	5J	--
Trimethylbenzene	--	9J	--
Chlorobenzene	--	--	--
Ethylmethylbenzene	--	--	--
Ethenylmethylbenzene	--	--	10J
2-Methylnaphthalene	--	11	1J
Dibenzofuran	--	4J	15
Fluorene	--	4J	7J
Pentachlorophenol	--	2J	--
Phenanthrene	--	6J	7J
Carbazole	--	5J	2J
Dihydrobenzothiophene	--	3J	--
1-Methylnaphthalene	--	11J	--
Ethenylnaphthalene	--	2J	--
Phenol	--	--	--
Anthracene	--	--	3J

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-01	NPS-GW-02	NPS-GW-03
4, 4 - DDE	--	--	--
Endrin	--	--	--
4,4 - DDD	--	--	--
Methoxychlor	--	--	--
Gamma - BHC	0.034JP	--	--
Endrin Ketone	--	--	--
4,4 - DDT	--	--	--
Toluene	4J	--	--
Ethylbenzene	52	--	1JB
Trimethylbenzene	15J	--	--
Chlorobenzene	--	--	--
Ethylmethylbenzene	42J	--	--
Ethenylmethylbenzene	--	--	--
2-Methylnaphthalene	10	--	--
Dibenzofuran	16	--	1J
Fluorene	22	--	--
Pentachlorophenol	--	--	--
Phenanthrene	46	--	1J
Carbazole	12	--	--
Dihydrobenzothiophene	--	--	--
1-Methylnaphthalene	--	--	--
Ethenylnaphthalene	--	--	--
Phenol	3J	--	--
Anthracene	5J	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-10	NPS-GW-11	NPS-GW-12
4, 4 - DDE	--	--	0.010JP
Endrin	--	--	0.011JP
4,4 - DDD	--	--	0.013JP
Methoxychlor	--	--	0.175JP
Gamma - BHC	--	0.013P	--
Endrin Ketone	--	0.0087JP	--
4,4 - DDT	0.0050J	--	--
Toluene	--	3J	28
Ethylbenzene	--	11	53
Trimethylbenzene	--	13J	20J
Chlorobenzene	--	--	2J
Ethylmethylbenzene	--	11J	12J
Ethenylmethylbenzene	--	9J	160J
2-Methynaphthalene	--	87J	63
Dibenzofuran	--	46	19
Fluorene	--	46	32
Pentachlorophenol	--	--	--
Phenanthrene	--	61	59
Carbazole	-	47	15
Dihydrobenzothiophene	--	--	--
1-Methynaphthalene	--	--	--
Ethenylnaphthalene	--	--	--
Phenol	--	--	1J
Anthracene	--	10	11

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	CE-BG-01A	CE-BM-01D	GS-MW-01-1
Benzo (a) anthracene	10U	--	--
Chrysene	10U	--	--
Benzo (a) pyrene	10U	--	--
Alkenylbenzene	10U	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-01-2	GS-MW-02-1	GS-MW-02-2
Benzo (a) anthracene	--	--	--
Chrysene	--	--	--
Benzo (a) pyrene	--	--	--
Alkenylbenzene	--	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-02S	GS-MW-03-1	GS-MW-03-2
Benzo (a) anthracene	--	--	--
Chrysene	--	--	--
Benzo (a) pyrene	--	--	--
Alkenylbenzene	--	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-01	NPS-GW-02	NPS-GW-03
Benzo (a) anthracene	2J	--	2J
Chrysene	1J	--	1J
Benzo (a) pyrene	--	--	--
Alkenylbenzene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-04	NPS-GW-08	NPS-GW-09
Benzo (a) anthracene	--	--	1J
Chrysene	--	--	--
Benzo (a) pyrene	--	--	--
Alkenylbenzene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 5 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-10	NPS-GW-11	NPS-GW-12
Benzo (a) anthracene	--	3J	4J
Chrysene	--	1J	3J
Benzo (a) pyrene	--	--	3J
Alkenylbenzene	--	--	52J

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 6

SUMMARY OF INORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	CE-BG-01A	CE-BG-01D	GS-MW-01-1
Aluminum	1530	--	6,060
Antimony	28U	--	--
Arsenic	24.9	--	--
Barium	86.5B	38.1B	45.9
Beryllium	1U	--	--
Cadmium	5U	--	6.7
Calcium	198,000	98,500	161,000
Chromium	4U	--	44.3
Cobalt	7B	--	--
Copper	6.8B	--	15.6
Cyanide	10U	--	--
Iron	17,600	299	6,420
Lead	102J	--	--
Magnesium	36,800	21,900	462,000
Manganese	797	83.9	110
Mercury	0.5	--	--
Nickel	19U	--	27.7
Potassium	24,900	13,000	206,000
Selenium	3U	--	--
Silver	4U	--	--
Sodium	128,000	195,000	4,020,000
Thallium	4U	--	--
Vanadium	8.9B	--	13.9
Zinc	46.2U	--	46.5

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

psi

TABLE 6 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-01-2	GS-MW-02-1	GS-MW-02-2	GS-MW-02S
Aluminum	1,430	111	823	688
Antimony	--	57.0	62.6	--
Arsenic	--	--	--	29.4
Barium	40.0	33.3	35.8	82.6
Beryllium	--	--	--	--
Cadmium	--	--	--	--
Calcium	182,000	192,000	188,000	92,500
Chromium	35.2	--	--	17.7
Cobalt	--	--	--	--
Copper	--	--	--	--
Cyanide	--	50.1	52.6	--
Iron	1,640	190	759	801
Lead	--	--	9.0	2.8
Magnesium	568,000	519,000	497,000	46,800
Manganese	50.1	21.0	23.8	614
Mercury	--	0.26	--	--
Nickel	--	--	--	17.7
Potassium	240,000	173,000	171,000	33,200
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	5,140,000	4,100,000	4,300,000	312,000
Thallium	--	--	--	--
Vanadium	--	--	--	10.8
Zinc	21.7	7.7	10.4	21.2

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

TABLE 6 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-MW-03-1	GS-MW-03-2	NPS-GW-01	NPS-GW-02
Aluminum	12,200	4,980	219	415
Antimony	--	--	--	--
Arsenic	--	--	--	4.7B
Barium	42.5	32.5	228	210
Beryllium	0.86	0.46	--	--
Cadmium	--	--	--	--
Calcium	208,000	196,000	188,000J	190,000J
Chromium	30.5	11.3	--	--
Cobalt	--	--	--	--
Copper	--	--	--	--
Cyanide	--	11.9	46.2	--
Iron	14,800	5,250	59,600J	26,700J
Lead	--	--	--	--
Magnesium	595,000	570,000	21,700	64,600
Manganese	119	61.9	947	596
Mercury	--	--	--	--
Nickel	--	--	--	--
Potassium	225,000	214,000	5,930J	28,500J
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	5,060,000	4,870,000	36,100	235,000
Thallium	--	--	--	--
Vanadium	27.6	12.8	--	--
Zinc	50.1	24.8	9.1B	8.8B

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

psi

TABLE 6 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-03	NPS-GW-04	NPS-GW-08	NPS-GW-09
Aluminum	98.8B	127B	687	946
Antimony	--	--	--	--
Arsenic	--	--	27.0J	--
Barium	180B	89.0B	163B	66.5B
Beryllium	--	--	--	--
Cadmium	--	--	--	--
Calcium	158,000J	147,000	214,000J	34,000J
Chromium	--	--	--	--
Cobalt	--	--	--	--
Copper	--	--	--	14.8B
Cyanide	--	--	--	--
Iron	16,600J	2,020J	69,900J	2,720J
Lead	--	--	--	2.2B
Magnesium	119,000	24,400	130,000	40,600
Manganese	1,630	165	1,670	97.5
Mercury	--	--	--	--
Nickel	--	--	--	--
Potassium	25,600J	16,600J	31,500J	25,400J
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	1,090,000	146,000	1,400,000	566,000
Thallium	--	--	--	--
Vanadium	--	--	10.7B	--
Zinc	10.2B	8.4B	10.6B	17.7B

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

psi

TABLE 6 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
GROUNDWATER SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-GW-10	NPS-GW-11	NPS-GW-12
Aluminum	875	4,990	1,060
Antimony	--	--	--
Arsenic	--	34.5J	5.3B
Barium	132B	90.8B	1,530
Beryllium	--	--	--
Cadmium	--	--	--
Calcium	162,000J	113,000	167,00
Chromium	--	6.3B	--
Cobalt	--	--	--
Copper	12.7B	--	6.6B
Cyanide	--	--	--
Iron	24,000J	59,600J	23,600
Lead	15.7J	2.4B	3.7
Magnesium	37,300	47,500	115,000
Manganese	1,180	936	216
Mercury	--	--	0.29
Nickel	--	--	--
Potassium	16,000J	12,700J	50,200
Selenium	--	--	--
Silver	--	--	--
Sodium	92,400	409,000	986,000
Thallium	--	--	--
Vanadium	--	12.9B	--
Zinc	24.1	10.4B	20.8

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank

psi

TABLE 7

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-01	NPS-SW-02	NPS-SW-03
Alkyl Naphthalene	10U	--	--
Trimethylnaphthalene	10U	--	--
Methylfluorene	10U	--	--
Methyl Phenanthrene	10U	--	--
Dimethylphenanthrene	10U	--	--
Methylpyrene	10U	--	--
Benzofluorene	10U	--	--
Methy Anthracene	10U	--	--
Benzo (j) fluoranthene	10U	--	--
Tetramethyl phenanthrene	10U	--	--
Benzonaphthothiephene	10U	--	--
Gamma - BHC	0.0047J	--	0.0020JP
Heptachlor	0.050U	--	0.0018JP
Dieldrin	0.050U	--	--
4,4 - DDE	0.050U	--	--
Endrin	0.050U	--	--
Endosulfan II	0.050U	--	--
Endosulfan Sulfate	0.050U	--	0.046JP
4,4 - DDT	0.050U	--	0.0055JP
Endrin Ketone	0.050U	--	--
Endrin Aldrehyde	0.050U	--	--
Alpha - Chlordane	0.050U	--	0.0091JP
Gamma Chlordane	0.050U	--	--
Aldrin	0.050U	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-01	NPS-SW-02	NPS-SW-03
Endosulfan I	0.050U	--	--
2 - Butanone	10U	--	--
Toluene	10U	--	--
Chlorobenzene	10U	--	--
Xylene	10U	--	--
Ethenylmethyl benzene	10U	--	--
Tetrachloroethane	10U	--	--
Aldol	10U	--	--
4 - Methylphenol	10U	--	--
Benzo (b) fluoranthene	10U	--	--
Benzo (k) fluoranthene	10U	--	--
1 - Methylnaphthalene	10U	--	--
Phenylnapthalene	10U	--	--
Beta BHC	0.050U	--	--
Heptachlor Epoxide	0.050U	--	--
4,4 - DDD	0.050U	--	0.0039JP
Methoxychlor	0.050U	--	0.019JP
Delta - BHC	0.050U	--	--
Aroclor - 1242	0.050U	--	--
Carbon Disulfide	10U	--	--
Ethyl Benzene	10U	--	--
Benzene	10U	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-04	NPS-SW-05	NPS-SW-06
Alkyl Naphthalene	--	--	--
Trimethylnaphthalene	--	--	--
Methylfluorene	--	--	--
Methyl Phenanthrene	--	--	--
Dimethylphenanthrene	--	--	--
Methylpyrene	--	--	--
Benzofluorene	--	--	--
Methy Anthracene	--	--	--
Benzo (j) fluoranthene	--	--	--
Tetramethyl phenanthrene	--	--	--
Benzonaphthothiephene	--	--	--
Gamma - BHC	0.0042JP	--	--
Heptachlor	--	0.0019JP	--
Dieldrin	--	0.053JP	--
4,4 - DDE	--	--	--
Endrin	--	--	--
Endosulfan II	--	--	--
Endosulfan Sulfate	--	0.091JP	--
4,4 - DDT	--	0.011JP	--
Endrin Ketone	--	--	--
Endrin Aldrehyde	--	0.23P	--
Alpha - Chlordane	0.0019JP	0.0088JP	--
Gamma Chlordane	--	0.013	--
Aldrin	--	0.0058JP	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-04	NPS-SW-05	NPS-SW-06
Endosulfan I	--	--	--
2 - Butanone	--	--	--
Toluene	--	--	--
Chlorobenzene	--	--	--
Xylene	--	--	--
Ethenylmethyl benzene	--	--	--
Tetrachloroethane	--	--	--
Aldol	--	--	--
4 - Methylphenol	--	--	--
Benzo (b) fluoranthene	--	--	--
Benzo (k) fluoranthene	--	--	--
1 - Methylnaphthalene	--	--	--
Phenylnapthalene	--	--	--
Beta BHC	--	--	--
Heptachlor Epoxide	--	--	--
4,4 - DDD	--	--	--
Methoxychlor	--	--	--
Delta - BHC	--	0.0040JP	--
Aroclor - 1242	--	--	--
Carbon Disulfide	1J	--	--
Ethyl Benzene	--	1J	--
Benzene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-07	NPS-SW-08	NPS-SW-09
Alkyl Naphthalene	--	--	--
Trimethylnaphthalene	--	--	--
Methylfluorene	--	--	--
Methyl Phenanthrene	--	--	--
Dimethylphenanthrene	--	--	--
Methylpyrene	--	--	--
Benzofluorene	--	--	--
Methy Anthracene	--	--	--
Benzo (j) fluoranthene	--	--	--
Tetramethyl phenanthrene	--	--	--
Benzonaphthothiephene	--	--	--
Gamma - BHC	--	--	0.0049JP
Heptachlor	--	--	--
Dieldrin	--	--	--
4,4 - DDE	--	--	--
Endrin	--	--	--
Endosulfan II	--	--	--
Endosulfan Sulfate	--	--	--
4,4 - DDT	--	--	--
Endrin Ketone	--	--	--
Endrin Aldrehyde	--	--	--
Alpha - Chlordane	--	--	--
Gamma Chlordane	--	--	--
Aldrin	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-07	NPS-SW-08	NPS-SW-09
Endosulfan I	--	--	--
2 - Butanone	--	--	--
Toluene	--	--	--
Chlorobenzene	--	--	--
Xylene	--	--	2JB
Ethenylmethyl benzene	--	--	--
Tetrachloroethane	--	--	--
Aldol	--	--	--
4 - Methylphenol	--	--	--
Benzo (b) fluoranthene	--	--	--
Benzo (k) fluoranthene	--	--	--
1 - Methylnaphthalene	--	--	--
Phenylnapthalene	--	--	--
Beta BHC	--	--	--
Heptachlor Epoxide	--	--	--
4,4 - DDD	--	--	--
Methoxychlor	--	--	--
Delta - BHC	--	--	--
Aroclor - 1242	--	--	--
Carbon Disulfide	--	--	--
Ethyl Benzene	--	--	--
Benzene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-10	NPS-SD-01	NPS-SD-02
Alkyl Naphthalene	--	540U	--
Trimethylnaphthalene	--	540U	--
Methylfluorene	--	540U	--
Methyl Phenanthrene	--	540U	--
Dimethylphenanthrene	--	540U	--
Methylpyrene	--	540U	--
Benzofluorene	--	540U	--
Methy Anthracene	--	540U	--
Benzo (j) fluoranthene	--	540U	--
Tetramethyl phenanthrene	--	540U	--
Benzonaphthothiephene	--	540U	--
Gamma - BHC	--	0.24J	--
Heptachlor	--	2.8U	--
Dieldrin	--	5.4U	--
4,4 - DDE	--	0.27J	--
Endrin	--	5.4U	--
Endosulfan II	--	5.4U	--
Endosulfan Sulfate	--	5.4U	--
4,4 - DDT	--	5.4U	--
Endrin Ketone	--	5.4U	--
Endrin Aldrehyde	--	5.4U	--
Alpha - Chlordane	--	2.8U	--
Gamma Chlordane	--	2.8U	--
Aldrin	--	0.25J	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-10	NPS-SD-01	NPS-SD-02
Endosulfan I	--	2.8U	--
2 - Butanone	--	4JB	--
Toluene	--	2J	--
Chlorobenzene	--	2J	--
Xylene	3J	16U	--
Ethenylmethyl benzene	--	540U	--
Tetrachloroethane	--	160J	130J
Aldol	--	160J	--
4 - Methylphenol	--	540U	--
Benzo (b) fluoranthene	--	540U	--
Benzo (k) fluoranthene	--	540U	--
1 - Methylnaphthalene	--	540U	--
Phenylnapthalene	--	540U	--
Beta BHC	--	0.26J	0.25J
Heptachlor Epoxide	--	0.11J	--
4,4 - DDD	--	0.34J	--
Methoxychlor	--	79	--
Delta - BHC	--	2.8U	--
Aroclor - 1242	--	54U	--
Carbon Disulfide	--	540U	--
Ethylbenzene	2J	16U	--
Benzene	2J	16U	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-03	NPS-SD-04	NPS-SD-05
Alkyl Naphthalene	1900J	770J	--
Trimethylnaphthalene	1400J	940J	--
Methylfluorene	1000J	--	--
Methyl Phenanthrene	1000J	680J	1800J
Dimethylphenanthrene	950J	--	1100J
Methylpyrene	1000J	850J	2500J
Benzofluorene	1900J	1100J	920J
Methy Anthracene	--	1500J	1100J
Benzo (j) fluoranthene	--	7400J	2700J
Tetramethyl phenanthrene	--	--	1700J
Benzonaphthothiephene	--	--	2300J
Gamma - BHC	0.62JP	2.2P	0.90JP
Heptachlor	0.23JP	0.45JP	--
Dieldrin	27P	14P	13P
4,4 - DDE	9.5P	10P	5.6P
Endrin	20P	55P	3.9JP
Endosulfan II	56	37	22P
Endosulfan Sulfate	4.2JP	3.4JP	1.8JP
4,4 - DDT	11P	8.4P	24P
Endrin Ketone	12P	23P	8.3P
Endrin Aldrehyde	8.3	16	3.7JP
Alpha - Chlordane	3.5P	1.7JP	0.60JP
Gamma Chlordane	14P	17P	7.8P
Aldrin	--	4.1P	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-03	NPS-SD-04	NPS-SD-05
Endosulfan I	--	3.3P	1.9JP
2 - Butanone	--	--	--
Toluene	--	--	--
Chlorobenzene	--	--	--
Xylene	--	--	--
Ethenylmethyl benzene	--	--	--
Tetrachloroethane	--	--	--
Aldol	--	--	--
4 - Methylphenol	--	--	--
Benzo (b) fluoranthene	--	--	--
Benzo (k) fluoranthene	--	--	--
1 - Methylnaphthalene	--	--	--
Phenylnapthalene	--	--	--
Beta BHC	--	--	--
Heptachlor Epoxide	--	--	--
4,4 - DDD	--	--	--
Methoxychlor	--	--	--
Delta - BHC	--	--	--
Aroclor - 1242	--	--	--
Carbon Disulfide	--	--	--
Ethyl Benzene	--	--	--
Benzene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-06	NPS-SD-07	NPS-SD-08
Alkyl Naphthalene	--	--	--
Trimethylnaphthalene	--	--	--
Methylfluorene	--	--	--
Methyl Phenanthrene	--	--	--
Dimethylphenanthrene	--	--	--
Methylpyrene	240J	--	--
Benzafluorene	420J	--	--
Methy Anthracene	--	--	--
Benzo (j) fluoranthene	--	--	--
Tetramethyl phenanthrene	--	--	--
Benzonaphthothiephene	240J	--	--
Gamma - BHC	--	--	--
Heptachlor	--	--	--
Dieldrin	2.5J	--	--
4,4 - DDE	5.3J	--	--
Endrin	--	--	--
Endosulfan II	--	--	--
Endosulfan Sulfate	2.4J	--	--
4,4 - DDT	0.28J	--	--
Endrin Ketone	--	--	--
Endrin Aldrehyde	1.6J	--	--
Alpha - Chlordane	1.2J	--	--
Gamma Chlordane	3.8	--	--
Aldrin	0.50J	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-06	NPS-SD-07	NPS-SD-08
Endosulfan I	--	--	--
2 - Butanone	--	--	--
Toluene	--	--	--
Chlorobenzene	--	--	--
Xylene	--	--	--
Ethenylmethyl benzene	--	--	--
Tetrachloroethane	180J	--	--
Aldol	180J	--	--
4 - Methylphenol	--	--	--
Benzo (b) fluoranthene	--	--	--
Benzo (k) fluoranthene	--	--	--
1 - Methylnaphthalene	--	--	--
Phenylnapthalene	--	--	--
Beta BHC	--	--	--
Heptachlor Epoxide	--	--	--
4,4 - DDD	2.1J	--	--
Methoxychlor	--	--	--
Delta - BHC	--	--	--
Aroclor - 1242	210	--	--
Carbon Disulfide	--	--	--
Ethyl Benzene	--	--	--
Benzene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-09	NPS-SD-10
Alkyl Naphthalene	--	3100J
Trimethylnaphthalene	--	--
Methylfluorene	--	--
Methyl Phenanthrene	--	1900J
Dimethylphenanthrene	--	1900J
Methylpyrene	--	1200J
Benzafluorene	--	1900J
Methy Anthracene	--	2800J
Benzo (j) fluoranthene	--	--
Tetromethyl phenanthrene	--	--
Benzonaphthothiephene	--	--
Gamma - BHC	--	--
Heptachlor	--	--
Dieldrin	--	4.6J
4,4 - DDE	--	13J
Endrin	--	--
Endosulfan II	--	--
Endosulfan Sulfate	--	5.8J
4,4 - DDT	0.65JP	--
Endrin Ketone	--	--
Endrin Aldrehyde	--	4.9J
Alpha - Chlordane	--	27J
Gamma Chlordane	--	13J
Aldrin	--	1.3J

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-09	NPS-SD-10
Endosulfan I	--	--
2 - Butanone	--	--
Toluene	--	--
Chlorobenzene	--	--
Xylene	--	5J
Ethenylmethyl benzene	--	37J
Tetrachloroethane	--	--
Aldol	--	--
4 - Methylphenol	--	390J
Benzo (b) fluoranthene	--	7100
Benzo (k) fluoranthene	--	2800
1 - Methylnaphthalene	--	1400J
Phenylnapthalene	--	940J
Beta BHC	--	--
Heptachlor Epoxide	--	2.7J
4,4 - DDD	--	--
Methoxychlor	--	--
Delta - BHC	--	--
Aroclor - 1242	--	--
Carbon Disulfide	--	--
Ethyl Benzene	--	--
Benzene	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-01	NPS-SW-02	NPS-SW-03
Methylene Chloride	9J	--	3J
Acetone	10U	--	--
Bis (2-ethylhexyl) phthalate	2JB	2JB	4JB
Fluoranthene	10U	--	--
Pyrene	10U	--	--
Benzo (a) anthracene	10U	--	--
Naphthalene	10U	--	--
2-Methynapthalene	10U	--	--
Acenaphthylene	10U	--	--
Acenphthene	10U	--	--
Dibenzofuran	10U	--	--
Fluorene	10U	--	--
Phenanthrene	10U	--	--
Anthracene	10U	--	--
Carbazole	10U	--	--
Chrysene	10U	--	--
Benzo (a) pyrene	10U	--	--
Indeno (1,2,3-cd) pyrene	10U	--	--
Dibenzo (a,h) anthracene	10U	--	--
Benzo (g,h,i) perylene	10U	--	--
Dimethylnaphthalene	10U	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-04	NPS-SW-05	NPS-SW-06
Methylene Chloride	6J	9J	1J
Acetone	--	--	--
Bis (2-ethylhexyl) phthalate	--	2JB	2JB
Fluoranthene	2J	4J	--
Pyrene	1J	5J	--
Genzo (a) anthracene	1J	3J	--
Naphthalene	--	--	--
2-Methynapthalene	--	--	--
Acenaphthylene	--	--	--
Acenphthene	--	--	--
Dibenzofuran	--	--	--
Fluorene	--	--	--
Phenanthrene	1J	1J	--
Anthracene	--	--	--
Carbazole	--	--	--
Chrysene	1J	2J	--
Benzo (a) pyrene	--	2J	--
Indeno (1,2,3-cd) pyrene	--	--	--
Dibenzo (a,h) anthracene	--	--	--
Benzo (g,h,i) perylene	--	--	--
Dimethylnaphthalene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-07	NPS-SW-08	NPS-SW-09
Methylene Chloride	8J	--	11
Acetone	--	--	--
Bis (2-ethylhexyl) phthalate	2JB	1JB	2JB
Fluoranthene	--		--
Pyrene	--	--	--
Genzo (a) anthracene	--	--	--
Naphthalene	--	--	--
2-Methynapthalene	--	--	--
Acenaphthylene	--	--	--
Acenphthene	--	--	--
Dibenzofuran	--	--	--
Fluorene	--	--	--
Phenanthrene	--	--	--
Anthracene	--	--	--
Carbazole	--	--	--
Chrysene	--	--	--
Benzo (a) pyrene	--	--	--
Indeno (1,2,3-cd) pyrene	--	--	--
Dibenzo (a,h) anthracene	--	--	--
Benzo (g,h,i) perylene	--	--	--
Dimethylnaphthalene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SW-10	NPS-SD-01	NPS-SD-02
Methylene Chloride	--	20B	22B
Acetone	--	54B	20B
Bis (2-ethylhexyl) phthalate	2JB	85J	--
Fluoranthene	--	94J	--
Pyrene	--	110J	--
Genzo (a) anthracene	--	69J	--
Naphthalene	--	16U	--
2-Methynapthalene	--	16U	--
Acenaphthylene	--	16U	--
Acenphthene	--	16U	--
Dibenzofuran	--	16U	--
Fluorene	--	16U	--
Phenanthrene	--	16U	--
Anthracene	--	16U	--
Carbazole	--	16U	--
Chrysene	--	58J	--
Benzo (a) pyrene	--	540U	--
Indeno (1,2,3-cd) pyrene	--	540U	--
Dibenzo (a,h) anthracene	--	540U	--
Benzo (g,h,i) perylene	--	540U	--
Dimethylnaphthalene	--	540U	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-03	NPS-SD-04	NPS-SD-05
Methylene Chloride	17B	13B	11B
Acetone	22B	17B	29B
Bis (2-ethylhexyl) phthalate	--	740JB	3,200B
Fluoranthene	14,000J	5,200	5,200
Pyrene	15,000J	5,500	5,700
Benzo (a) anthracene	12,000J	3,900	4,800
Naphthalene	560	380J	150J
2-Methynapthalene	290J	280J	98J
Acenaphthylene	3,200	680J	1,100
Acenphthene	3,200	1,100	600J
Dibenzofuran	660	310J	140J
Fluorene	2,400	730J	740J
Phenanthrene	11,000J	4,200	3,300
Anthracene	4,900J	1,500	1,600
Carbazole	590	520J	200J
Chrysene	9,400J	2,900	3,900
Benzo (a) pyrene	7,300J	2,300	3,200
Indeno (1,2,3-cd) pyrene	3,600	1,500	1,500
Dibenzo (a,h) anthracene	1,000	400J	430J
Benzo (g,h,i) perylene	2,300	960	1,200
Dimethylnaphthalene	950J	600J	920J

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-06	NPS-SD-07	NPS-SD-08
Methylene Chloride	40B	52B	43B
Acetone	49B	61B	39B
Bis (2-ethylhexyl) phthalate	450J	160J	76J
Fluoranthene	1,500	--	72J
Pyrene	1,700	--	76J
Genzo (a) anthracene	1,300	--	47J
Naphthalene	--	--	--
2-Methynapthalene	--	--	--
Acenaphthylene	--	--	--
Acenphthene	140J	--	--
Dibenzofuran	--	--	--
Fluorene	80J	--	--
Phenanthrene	480J	--	--
Anthracene	250J	--	--
Carbazole	73J	--	--
Chrysene	680	--	--
Benzo (a) pyrene	770	--	--
Indeno (1,2,3-cd) pyrene	340J	--	--
Dibenzo (a,h) anthracene	120J	--	--
Benzo (g,h,i) perylene	240J	--	--
Dimethylnaphthalene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 7 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SD-09	NPS-SD-10
Methylene Chloride	20B	71B
Acetone	55B	91B
Bis (2-ethylhexyl) phthalate	--	2,200J
Fluoranthene	--	13,000
Pyrene	--	12,000
Genzo (a) anthracene	--	11,000
Naphthalene	--	750J
2-Methynapthalene	--	560J
Acenaphthylene	--	1,900J
Acenphthene	--	1,900J
Dibenzofuran	--	460J
Fluorene	--	1,800J
Phenanthrene	--	8,400
Anthracene	--	5,800
Carbazole	--	1,300J
Chrysene	--	8,000
Benzo (a) pyrene	--	5,500
Indeno (1,2,3-cd) pyrene	--	1,100J
Dibenzo (a,h) anthracene	--	470J
Benzo (g,h,i) perylene	--	670J
Dimethylnaphthalene	--	1,400J

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 8

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS[a]	NPS-SW-01	NPS-SW-02	NPS-SW-03	NPS-SW-04
Aluminum	1,460	1,300	13,000	4,250
Antimony	41.9U	--	--	--
Arsenic	5.9B	5.7B	17.0	--
Barium	9.8B	11.5B	35.8B	19.0B
Beryllium	3.6U	--	--	--
Cadmium	4.3U	--	--	
Calcium	215,000J	229,000J	216,000J	240,000J
Chromium	6.2U	--	16.5	--
Cobalt	10.1U	--	--	--
Copper	12.7U	--	76.3	21.2B
Cyanide	10.0U	--	--	--
Iron	998J	933J	12,200J	3,290J
Lead	40.0U	--	81.1	--
Magnesium	720,000	737,000	654,000	753,000
Manganese	17.6	14.4B	177	57.3
Mercury	0.200	--	--	--
Nickel	34.7U	--	--	--
Potassium	319,000J	312,000J	279,000J	360,000
Selenium	36.0U	--	--	--
Silver	7.7U	--	--	--
Sodium	6,700,000	7,510,000	6,040,000	6,340,000
Thallium	270U	--	--	--
Vanadium	9.8U	--	35.1B	12.1B
Zinc	14.1B	3.4B	145	30.3

a = Surface water samples in ug/kg. Sediment samples in mg/kg.
U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value
B = Analyte found in associated blank.

psi

TABLE 8 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS[a]	NPS-SW-05	NPS-SW-06	NPS-SW-07	NPS-SW-08
Aluminum	5,630	876	742	1,960
Antimony	--	--	--	--
Arsenic	9.3B	4.1B	--	5.3B
Barium	23.0B	11.2B	19.5B	12.7B
Beryllium	--	--	--	--
Cadmium	--	--	--	--
Calcium	238,000J	195,000J	157,000J	210,000J
Chromium	16.6	--	--	--
Cobalt	--	--	--	--
Copper	50.8	--	--	--
Cyanide	--	--	--	--
Iron	6,170J	634J	821J	1,270J
Lead	--	--	--	--
Magnesium	746,000	652,000	492,000	676,000
Manganese	97.9	13.8B	14.8B	18.9
Mercury	--	--	--	--
Nickel	--	--	--	--
Potassium	364,000J	281,000J	190,000J	283,000J
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	6,640,000	5,870,000	432,000	5,990,000
Thallium	--	--	--	--
Vanadium	21.9B	--	--	11.2B
Zinc	94.0	--	29.0	20.2

a = Surface water samples in ug/kg. Sediment samples in mg/kg.
U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value
B = Analyte found in associated blank.

TABLE 8 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS[a]	NPS-SW-09	NPS-SW-10	NPS-SD-01	NPS-SD-02
Aluminum	799	4,910	18,600	1,660
Antimony	--	--	18.5U	--
Arsenic	--	5.5B	8.5	2.0B
Barium	10.9B	26.8B	20.5B	3.1B
Beryllium	--	--	0.80B	0.17B
Cadmium	--	--	1.6U	--
Calcium	200,000J	52,800J	56,600	5,380
Chromium	--	--	23.6	6.3
Cobalt	--	--	4.4B	--
Copper	--	--	16.2	1.1B
Cyanide	--	--	0.82U	--
Iron	606J	4,310J	160,000	2,870
Lead	--	31.8J	11.6	1.7
Magnesium	654,000	89,800	4,050	1,210B
Manganese	15.9	85.4	120	30.0
Mercury	--	--	0.16U	--
Nickel	--	--	10.8B	--
Potassium	277,000J	31,700J	1,760	376B
Selenium	--	--	1.2U	--
Silver	--	--	1.7U	--
Sodium	5,800,000	739,000	8,070	3,070
Thallium	--	--	0.88U	--
Vanadium	--	12.5B	36.9	4.4B
Zinc	--	101	61.4	12.0

a = Surface water samples in ug/kg. Sediment samples in mg/kg.
U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value
B = Analyte found in associated blank.

TABLE 8 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS[a]	NPS-SD-03	NPS-SD-04	NPS-SD-05	NPS-SD-06
Aluminum	6,080	1,890	1,730	10,800
Antimony	--	16.1	21.8	--
Arsenic	11.5	7.3J	28.8J	8.6
Barium	86.6	94.7	90.7	31.6B
Beryllium	--	2.0	--	0.42B
Cadmium	--	1.4	1.3	--
Calcium	11,400	7,070	9,450	9,520
Chromium	58.7	63.0	79.8	25.4
Cobalt	8.4B	18.1	28.6	--
Copper	284	1,200	534	34.5
Cyanide	--	0.79	--	--
Iron	18,100	31,900	88,500	15,300
Lead	321	961	12,300	251
Magnesium	2,190	1,790	1,840	3,010
Manganese	176	589	515	143
Mercury	0.78	1.6	0.56	0.32
Nickel	56.6	45.4	64.1	8.9B
Potassium	630B	681B	585B	1,390B
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	3,930	3,690	2,200	7,820
Thallium	--	--	--	--
Vanadium	35.1	26.9	50.0	22.6
Zinc	835	2,430	2,050	133

a = Surface water samples in ug/kg. Sediment samples in mg/kg.
U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value
B = Analyte found in associated blank.

TABLE 8 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SURFACE WATER AND SEDIMENT SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS[a]	NPS-SD-07	NPS-SD-08	NPS-SD-09	NPS-SD-10
Aluminum	19,800	2,210	10,100	25,500
Antimony	--	--	--	--
Arsenic	13.6	3.0	7.7	21.3
Barium	24.3B	4.9B	13.8B	54.7B
Beryllium	--	--	--	1.2B
Cadmium	--	--	--	--
Calcium	4,250	14,100	19,400	46,600
Chromium	43.9	7.6	27.5	67.2
Cobalt	7.5B	--	6.9B	--
Copper	11.2B	--	12.7	74.2
Cyanide	--	--	--	--
Iron	27,600	3,950	27,500	28,200
Lead	69.9	2.9	8.5J	107
Magnesium	8,140	1,330B	5,560	8,660
Manganese	222	75.6	216	825
Mercury	--	--	--	0.40
Nickel	--	--	16.6	19.7B
Potassium	5,100	710B	2,880	3,020B
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	16,200	3,760	8,600	17,800
Thallium	--	--	--	--
Vanadium	53.9	7.4B	25.0	60.5
Zinc	44.0	10.8	25.4	272

a = Surface water samples in ug/kg. Sediment samples in mg/kg.
U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value
B = Analyte found in associated blank.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	CE-AB-01A 0-2'	NPS-SB-01-1 0-2'	NPS-SB-02-1 0-2'
Ethylbenzene	12U	--	--
Xylene	12U	--	--
Ethylmethyl benzene	400U	--	--
Trimethylbenzene	400U	--	--
Ethenyl methyl benzene	400U	--	--
Diethylbenzene	400U	--	--
1-H-Indene	400U	--	--
Ethyldimethyl benzene	400U	--	--
2-Methylnaphthalene	400U	57J	61J
Acenaphthylene	400U	470	180J
Acenaphthene	400U	160J	140J
Dibenzofuran	400U	61J	49J
Carbazole	400U	490	92J
Di-n-butylphthalate	400U	97J	160JB
Indeno (1,2,3 -cd) pyrene	78J	2,300	880
Dibenz (a,h) anthracene	400U	600	270J
Benzo (g,h,i) perylene	58J	1,500	590
Aldol	400U	390JB	--
Benzofluorene	400U	740J	90J
Methylpyrene	400U	550J	1,500J
Benzanthracen-7-one	400U	3,000J	--
Methylanthracene	400U	--	510J
Benzonaphthothiophene	400U	--	90J
Benzofluoranthene	160J	--	1,300J
	sub 696	sub 4400	sub 3,040
	total 974	13,600	6040

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	CE-AB-01A 0-2'	NPS-SB-01-1 0-2'	NPS-SB-02-1 0-2'
Endosulfan Sulfate	4U	--	--
Endrin Ketone	4U	--	--
Aldrin	2.1U	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-03-1 0-2'	NPS-SB-04-1 0-2'	GS-SB-01-1 38-40'
Methylene Chloride	33B	320J	--
Acetone	14B	--	--
Alpha - BHC	--	--	--
Endosulfan I	--	--	--
4,4 - DDE	0.25J	--	--
Tetrachloroethane	--	--	--
1 - Phenyl-ethanone	--	--	140J
Tetramethyl phenanthrene	190J	--	280J
Methoxychlor	6.8J	1,100	1.2JB
1-Methyl-7-Phenanthrene	--	--	--
2-Cyclohexen	--	--	--
Fluorene	--	620,000	--
Phenanthrene	350J	2,100,00	--
Anthracene	130J	520,000	--
Fluoranthene	1,200	1,300,000	--
Pyrene	1,100	1,000,000	--
Benzo (a) anthracene	950	690,000	--
Chrysene	810	470,000	--
Benzo(a) pyrene	920	410,000	--
Methylmethyl ethylbenzene	--	--	--
Napthalene	83J	1,300,000	--
Bis(2-ethylhexl) phthalate	65J	--	--
Benzene	--	1,200J	--
Toluene	--	2,600	--
	5.6	2680	1,570,000

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-03-1 0-2'	NPS-SB-04-1 0-2'	GS-SB-01-1 38-40'
Ethylbenzene	--	6,600	--
Xylene	--	16,000	--
Ethylmethyl benzene	--	8,800J	--
Trimethylbenzene	--	4,800J	--
Ethenyl methyl benzene	--	5,000J	--
Diethylbenzene	--	2,800J	--
1-H-Indene	--	14,000J	--
Ethyldimethyl benzene	--	4,200J	--
2-Methylnaphthalene	73J	300,000	--
Acenaphthylene	130J	98,000	--
Acenaphthene	--	470,000	--
Dibenzofuran	39J	420,000	--
Carbazole	92J	190,000	--
Di-n-butylphthalate	97JB	--	--
Indeno (1,2,3 -cd) pyrene	760	250,000	--
Dibenz (a,h) anthracene	200J	85,000	--
Benzo (g,h,i) perylene	720	150,000	--
Aldol	110J	--	--
Benzofluorene	300J	150,000J	--
Methylpyrene	190J	--	--
Benzanthracen-7-one	--	--	--
Methylanthracene	--	18,000J	--
Benzonaphthothiophene	380J	--	--
Benzofluoranthene	1,200J	150,000J	--
	sus 2880	635,000	
	total 5,560.	2,205,000	

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-03-1 0-2'	NPS-SB-04-1 0-2'	GS-SB-01-1 38-40'
Benzothiophene	--	90,000J	--
1-Methylnaphthalene	--	210,000J	--
Dimethylnaphthalene	--	120,000	--
Methylfluorene	--	120,000	--
Dibenzothiophene	--	180,000J	--
2-Phenyl-naphthalene	--	60,000J	--
Di-n-octyl Phthalate	43J	--	--
Heptachlor	--	4.5JP	--
Dieldrin	5.6	--	--
Endosulfan II	--	--	--
4,4 - DDT	0.56J	--	--
Endrin Aldehyde	--	100	--
Alpha - Chlordane	--	0.81J	--
Gamma - Chlordane	0.20J	--	--
Gamma - BHC	--	--	--
Heptachlor Epoxide	0.38J	--	--
Endrin	0.88J	--	--
4,4 - DDD	--	--	--
Delta - BHC	--	8.5JP	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	NPS-SB-03-1 0-2'	NPS-SB-04-1 0-2'	GS-SB-01-1 38-40'
Endosulfan Sulfate	0.35J	40	--
Endrin Ketone	0.52	45	--
Aldrin	0.81J	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-01-2 40-42'	GS-SB-01-3 42-44'	GS-SB-02-1 31-33'
Methylene Chloride	15B	14B	23B
Acetone	17B	34B	35B
Alpha - BHC	--	--	0.22JP
Endosulfan I	--	--	0.61JP
4,4 - DDE	--	--	0.22J
Tetrachloroethane	90J	--	--
1 - Phenyl-ethanone	--	140J	--
Tetramethyl phenanthrene	--	--	1,200J
Methoxychlor	--	2.0JBP	--
1-Methyl-7-Phenanthrene	--	730J	--
2-Cyclohexen	--	91JB	--
Fluorene	--	--	55J
Phenanthrene	--	--	220J
Anthracene	--	--	71J
Fluoranthene	--	--	410J
Pyrene	--	--	380J
Benzo (a) anthracene	--	--	190J
Chrysene	--	--	150J
Benzo(a) pyrene	--	--	99J
Methylmethyl ethylbenzene	--	--	240J
Napthalene	--	--	--
Bis(2-ethylhexl) phthalate	--	--	--
Benzene	--	--	--
Toluene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-01-2 40-42'	GS-SB-01-3 42-44'	GS-SB-02-1 31-33
Ethylbenzene	--	--	--
Xylene	--	--	--
Ethylmethyl benzene	--	--	--
Trimethylbenzene	--	--	--
Ethylmethyl benzene	--	--	--
Diethylbenzene	--	--	--
1-H-Indene	--	--	--
Ethyldimethyl benzene	--	--	--
2-Methylnaphthalene	--	--	--
Acenaphthylene	--	--	--
Acenaphthene	--	--	--
Dibenzofuran	--	--	--
Carbazole	--	--	--
Di-n-butylphthalate	--	--	--
Indeno (1,2,3 -cd) pyrene	--	--	--
Dibenz (a,h) anthracene	--	--	--
Benzo (g,h,i) perylene	--	--	--
Aldol	--	--	--
Benzofluorene	--	--	--
Methylpyrene	--	--	--
Benzanthracen-7-one	--	--	--
Methylanthracene	--	--	--
Benzonaphthothiophene	--	--	--
Benzofluoranthene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-01-2 40-42'	GS-SB-01-3 42-44'	GS-SB-02-1 31-33'
Benzothiophene	--	--	--
1-Methylnaphthalene	--	--	--
Dimethylnaphthalene	--	--	--
Methylfluorene	--	--	--
Dibenzothiophene	--	--	--
2-Phenyl-naphthalene	--	--	--
Di-n-octyl Phthalate	--	--	--
Heptachlor	--	--	--
Dieldrin	--	--	--
Endosulfan II	--	--	--
4,4 - DDT	--	--	--
Endrin Aldehyde	--	--	--
Alpha - Chlordane	--	--	--
Gamma - Chlordane	--	--	--
Gamma - BHC	--	--	--
Heptachlor Epoxide	--	--	--
Endrin	--	--	--
4,4 - DDD	--	--	--
Delta - BHC	--	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-01-2 40-42'	GS-SB-01-3 42-44'	GS-SB-02-1 31-33'
Endosulfan Sulfate	--	--	--
Endrin Ketone	--	--	--
Aldrin	--	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-02-2 35-37'	GS-SB-02-3 37-39'	GS-SB-03-1 33-35'
Methylene Chloride	9JB	10JB	13B
Acetone	14B	21B	33B
Alpha - BHC	--	--	--
Endosulfan I	--	--	--
4,4 - DDE	--	--	--
Tetrachloroethane	--	130J	--
1 - Phenyl-ethanone	--	-	--
Tetramethyl phenanthrene	--	--	--
Methoxychlor	4.3JBP	1.4JB	2.3JB
1-Methyl-7-Phenanthrene	--	--	--
2-Cyclohexen	85JB	85JB	--
Fluorene	--	--	--
Phenanthrene	70J	--	--
Anthracene	--	--	--
Fluoranthene	120J	--	--
Pyrene	100J	--	--
Benzo (a) anthracene	--	--	--
Chrysene	--	--	--
Benzo(a) pyrene	--	--	--
Methylmethyl ethylbenzene	130J	--	--
Napthalene	58J	--	--
Bis(2-ethylhexl) phthalate	--	--	--
Benzene	--	--	--
Toluene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

psi

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-02-2 35-37'	GS-SB-02-3 37-39'	GS-SB-03-01 33-35'
Ethylbenzene	--	--	--
Xylene	--	--	--
Ethylmethyl benzene	--	--	--
Trimethylbenzene	--	--	--
Ethenyl methyl benzene	--	--	--
Diethylbenzene	--	--	--
1-H-Indene	--	--	--
Ethyldimethyl benzene	--	--	--
2-Methylnaphthalene	--	--	--
Acenaphthylene	--	--	--
Acenaphthene	--	--	--
Dibenzofuran	--	--	--
Carbazole	--	--	--
Di-n-butylphthalate	--	--	--
Indeno (1,2,3 -cd) pyrene	--	--	--
Dibenz (a,h) anthracene	--	--	--
Benzo (g,h,i) perylene	--	--	--
Aldol	--	--	--
Benzofluorene	--	--	--
Methylpyrene	--	--	--
Benzanthracen-7-one	--	--	--
Methylanthracene	--	--	--
Benzonaphthothiophene	--	--	--
Benzofluoranthene	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-02-2 35-37	GS-SB-02-3 37-39'	GS-SB-03-1 33-35
Benzothiophene	--	--	--
1-Methylnaphthalene	--	--	--
Dimethylnaphthalene	--	--	--
Methylfluorene	--	--	--
Dibenzothiophene	--	--	--
2-Phenyl-naphthalene	--	--	--
Di-n-octyl Phthalate	--	--	--
Heptachlor	--	--	--
Dieldrin	--	--	--
Endosulfan II	--	--	--
4,4 - DDT	--	--	--
Endrin Aldehyde	--	--	--
Alpha - Chlordane	--	--	--
Gamma - Chlordane	--	--	--
Gamma - BHC	--	--	--
Heptachlor Epoxide	--	--	--
Endrin	--	--	--
4,4 - DDD	--	--	--
Delta - BHC	--	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-02-2 35-37'	GS-SB-02-3 37-39'	GS-SB-03-1 33-35'
Endosulfan Sulfate	--	--	--
Endrin Ketone	--	--	--
Aldrin	--	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-03-2 35-37'	GS-SB-03-3 37-39'
Methylene Chloride	14B	13JB
Acetone	95B	73B
Alpha - BHC	--	--
Endosulfan I	--	--
4,4 - DDE	--	--
Tetrachloroethane	--	--
1 - Phenyl-ethanone	--	--
Tetramethyl phenanthrene	--	140J
Methoxychlor	24B	--
1-Methyl-7-Phenanthrene	--	--
2-Cyclohexen	--	240JB
Fluorene	--	--
Phenanthrene	--	--
Anthracene	--	--
Fluoranthene	--	--
Pyrene	--	--
Benzo (a) anthracene	--	--
Chrysene	--	--
Benzo(a) pyrene	--	--
Methylmethyl ethylbenzene	--	--
Napthalene	--	--
Bis(2-ethylhexl) phthalate	--	99J
Benzene	--	--
Toluene	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-03-2 35-37'	GS-SB-03-3 37-39'
Ethylbenzene	--	--
Xylene	--	--
Ethylmethyl benzene	--	--
Trimethylbenzene	--	--
Ethenyl methyl benzene	--	--
Diethylbenzene	--	--
1-H-Indene	--	--
Ethyldimethyl benzene	--	--
2-Methylnaphthalene	--	--
Acenaphthylene	--	--
Acenaphthene	--	--
Dibenzofuran	--	--
Carbazole	--	--
Di-n-butylphthalate	--	--
Indeno (1,2,3 -cd) pyrene	--	--
Dibenz (a,h) anthracene	--	--
Benzo (g,h,i) perylene	--	--
Aldol	--	--
Benzofluorene	--	--
Methylpyrene	--	--
Benzanthracen-7-one	--	--
Methylanthracene	--	--
Benzonaphthothiophene	--	--
Benzofluoranthene	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-03-2 35-37'	GS-SB-03-3 37-39'
Benzothiophene	--	--
1-Methylnaphthalene	--	--
Dimethylnaphthalene	--	--
Methylfluorene	--	--
Dibenzothiophene	--	--
2-Phenyl-naphthalene	--	--
Di-n-octyl Phthalate	--	--
Heptachlor	--	--
Dieldrin	--	--
Endosulfan II	--	--
4,4 - DDT	--	--
Endrin Aldehyde	--	--
Alpha - Chlordane	--	--
Gamma - Chlordane	--	--
Gamma - BHC	--	--
Heptachlor Epoxide	--	--
Endrin	--	--
4,4 - DDD	--	--
Delta - BHC	--	--

U	=	Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
--	=	Material analyzed but not detected above MQL
J	=	Estimated value
B	=	Analyte found in associated blank.
P	=	Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 9 (continued)

SUMMARY OF ORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (ug/kg)	GS-SB-03-2 35-37'	GS-SB-03-3 37-39'
Endosulfan Sulfate	--	--
Endrin Ketone	--	--
Aldrin	--	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL)
-- = Material analyzed but not detected above MQL
J = Estimated value
B = Analyte found in associated blank.
P = Pesticide/Arochlor target analyte with > 25% difference for detected concentrations between two GC columns. The number is the lower of the two values.

TABLE 10

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (mg/kg)	CE-AB-01A 0-2'	NPS-SB-01-1 0-2'	NPS-SB-02-1 0-2'	NPS-SB-03-1 0-2'
Aluminum	7,540	3,230	3,650	4,750
Antimony	5.3	12.0	--	--
Arsenic	9.7U	6.8J	2.2	9.9
Barium	58.6	77.5	8.4B	82.2
Beryllium	0.3B	--	--	--
Cadmium	0.97U	1.8	1.0B	--
Calcium	3,030	6,410	3,970	4,760
Chromium	10.9	52.4	7.4	18.6
Cobalt	0.97U	5.5B	--	5.8B
Copper	20.2	200	34.1	201
Cyanide	0.61U	--	--	--
Iron	5,900	36,200	5,180	25,100
Lead	103J	334	56.5	1,310
Magnesium	439B	778B	321B	1,130B
Manganese	34.5	191	39.9	170
Mercury	0.12U	0.63	0.18	0.80
Nickel	4.5B	27.5	--	14.2
Potassium	150U	483B	455B	448B
Selenium	0.73U	--	--	--
Silver	0.97U	--	--	--
Sodium	84.2B	417B	--	86.6B
Thallium	0.97U	--	--	--
Vanadium	12.0	40.5	5.5B	28.2
Zinc	94.7	524	133	--

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value.
B = Analyte found in associated blank

psi

TABLE 10 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (mg/kg)	NPS-SB-04-1 0-2'	GS-SB-01-1 38-40'	GS-SB-01-2 40-42'	SG-SB-01-3 42-44'
Aluminum	20,500	1,960	3,150	3,790
Antimony	--	--	--	--
Arsenic	14.6	1.7B	3.3	3.2
Barium	47.1B	4.7B	5.9B	6.5B
Beryllium	--	0.15B	0.22B	0.25B
Cadmium	--	--	--	--
Calcium	9,330	6,390	8,410	6,560
Chromium	35.2	7.0	8.6	10.9
Cobalt	9.1B	--	--	--
Copper	54.2	--	--	--
Cyanide	2.0	--	--	--
Iron	27,100	3,390	4,390	5,380
Lead	95.9	1.4	3.0J	2.0
Magnesium	4,550	932B	1,090B	1,370
Manganese	179	23.5	33.7	38.2
Mercury	0.36	--	--	--
Nickel	18.5	--	--	--
Potassium	2,570	--	483B	--
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	2,290	1,030JB	1,110JB	1,810J
Thallium	--	--	--	--
Vanadium	58.2	4.2B	6.0B	7.1B
Zinc	159	7.1	11.3	10.4

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value.
B = Analyte found in associated blank

TABLE 10 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (mg/kg)	GS-SB-02-1 31-33'	GS-SB-02-2 35-37'	GS-SB-02-3 37-39	GS-SB-03-1 33-35'
Aluminum	2,710	4,060	3,740	6,700
Antimony	--	--	--	--
Arsenic	4.8	3.3	3.4	7.3J
Barium	5.4B	6.7B	5.9B	8.6B
Beryllium	0.24B	0.33B	0.28B	0.33B
Cadmium	--	--	--	--
Calcium	9,090	10,600	10,800	7,960
Chromium	9.0	11.3	9.0	12.7
Cobalt	--	--	--	--
Copper	--	--	--	--
Cyanide	--	--	--	--
Iron	5,450	6,410	5,650	7,250
Lead	1.7	1.7	1.7	2.7J
Magnesium	1,090B	1,470	1,510	1,840
Manganese	28.0	31.7	30.0	46.6
Mercury	--	--	--	--
Nickel	--	--	--	--
Potassium	--	543B	492B	943B
Selenium	--	--	--	--
Silver	--	--	--	--
Sodium	1,730J	1,310J	1,880J	2,160J
Thallium	--	--	--	--
Vanadium	5.7B	9.2B	8.7B	11.5B
Zinc	10.2	10.5	9.5	14.3

U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value.
B = Analyte found in associated blank

TABLE 10 (continued)

SUMMARY OF INORGANIC ANALYTICAL RESULTS
SOIL SAMPLES
CHARLESTON HARBOR SITE
CHARLESTON, SOUTH CAROLINA

PARAMETERS (mg/kg)	GS-SB-03-2 35-37'	GS-SB-03-3 37-39'
Aluminum	1,780	3,670
Antimony	--	--
Arsenic	2.7B	3.8
Barium	4.1B	6.2B
Beryllium	0.13B	0.25B
Cadmium	--	--
Calcium	6,600	8,580
Chromium	6.9	10.9
Cobalt	--	--
Copper	--	--
Cyanide	--	--
Iron	3,050	5,180
Lead	1.4	3.4J
Magnesium	849B	1,300B
Manganese	22.1	35.5
Mercury	--	0.15
Nickel	--	--
Potassium	--	580B
Selenium	--	--
Silver	--	--
Sodium	2,230J	2,110J
Thallium	--	--
Vanadium	4.0B	7.0B
Zinc	6.9	9.3

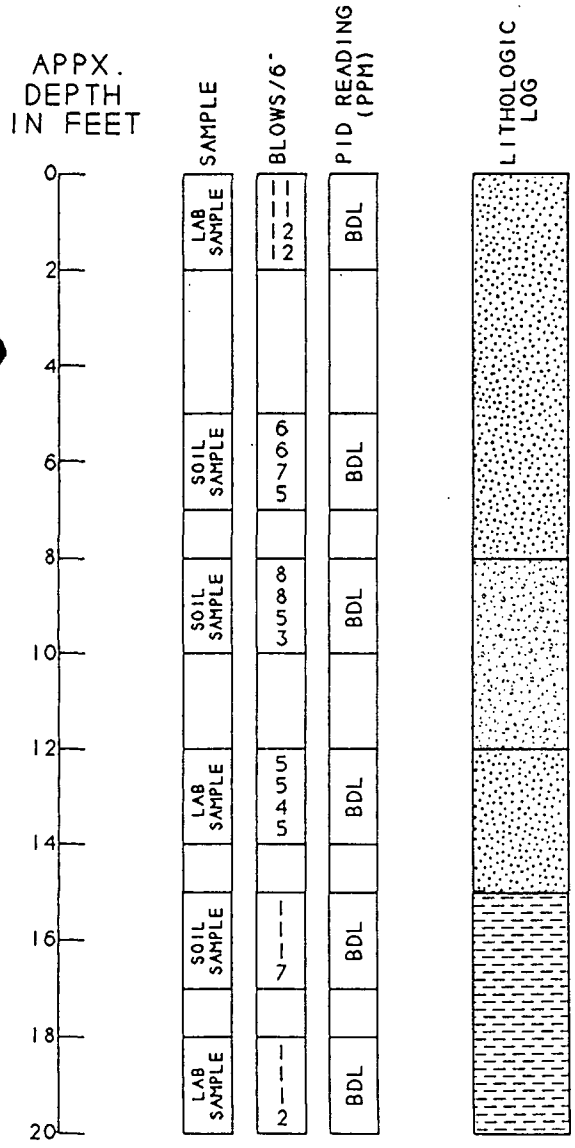
U = Material analyzed but not detected. The number is the Method Quantitation Limit (MQL).
-- = Material analyzed but not detected above MQL.
J = Estimated value.
B = Analyte found in associated blank

psi

Appendix D

Soil Boring Logs

Professional Service Industries, Inc. psi 2030 Powers Ferry Road, Suite 460, Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: NPS-SB-01 PROJECT NUMBER: 513-44008
PROJECT: CHARLESTON HARBOR SITE	LOCATION: CONCORD STREET, CHARLESTON, SOUTH CAROLINA	
GEOLOGIST: S. FINE	DRILLING METHOD: MUD ROTARY	SAMPLING INTERVAL: SAMPLED AS NOTED
DRILLING CONTRACTOR: M & R SOIL INVESTIGATION INC.	BOREHOLE DIAMETER: 8 INCHES	SAMPLING METHOD: 2" SPLIT-SPOON
DRILLER: B. GORMAN	TOTAL BORING DEPTH: 20.0 FEET BELOW LAND SURFACE	DATE BORING COMPLETED: 2-23-94



LITHOLOGIC DESCRIPTION

SAND. fine to coarse grained. little silt. some gravel. fine to medium. brown to black.

SAND. very fine to fine grained. some silt. trace clay. grey.

GRAVEL. fine to medium. grey to brown.

SAND. very fine to medium grained. some silt. some gravel. fine to medium. brown to grey.

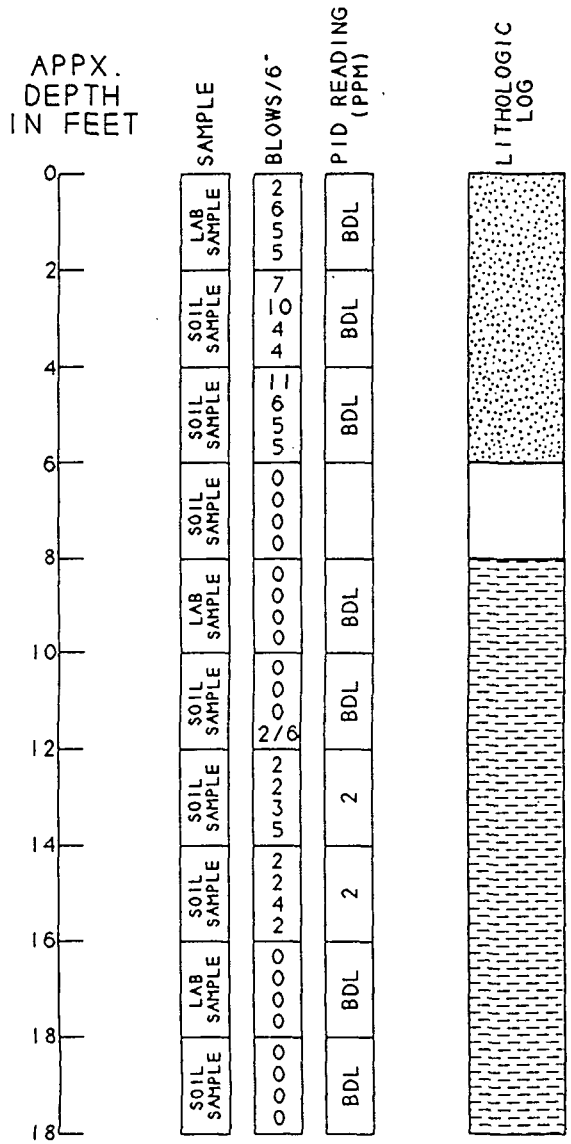
CLAY. very soft. trace sand. trace silt. grey to black.

CLAY. very soft. trace silt. grey to black.

Professional Service Industries, Inc. 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: NPS-SB-02 PROJECT NUMBER: 513-44008

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON, SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	HOLLOW STEM AUGER	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	4 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	20.0 FEET BELOW LAND SURFACE	2-22-94



LITHOLOGIC DESCRIPTION

SAND. fine to medium grained. little silt. some gravel. fine to coarse. brown to grey.

SAND. fine to medium grained. little silt. brown to grey-black.

SAND. fine to medium grained. little silt. trace clay. wood. creosote odor. brown to black.

NO RECOVERY

CLAY. very soft. and sand. fine to coarse grained. wet. wood. creosote odor. black.

CLAY. very soft. some sand. fine grained. wet. wood. creosote odor. black.

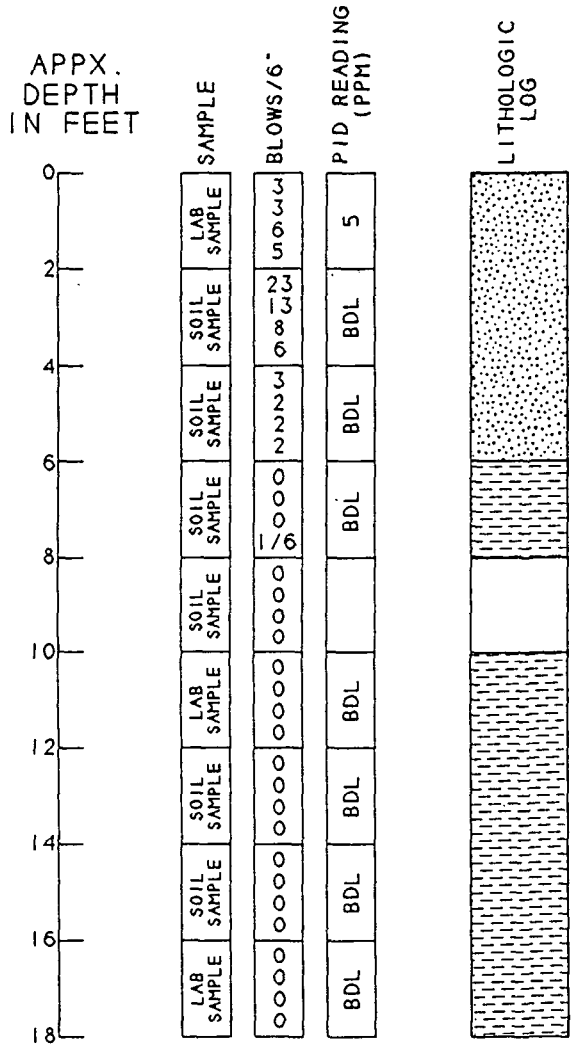
CLAY. very soft. some sand. fine grained. brown to black.

CLAY. very soft. and sand. fine to medium grained. wood. wet. red-brown to black.

CLAY. very soft. trace sand. shells. wet. black.

CLAY. very soft. little sand. fine grained. wet. grey to black.

Professional Service Industries, Inc. PSI 2030 Powers Ferry Road, Suite 460, Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: NPS-SB-03 PROJECT NUMBER: 513-44008
PROJECT: CHARLESTON HARBOR SITE	LOCATION: CONCORD STREET, CHARLESTON, SOUTH CAROLINA	
GEOLOGIST: S. FINE	DRILLING METHOD: HOLLOW STEM AUGER	SAMPLING INTERVAL: SAMPLED AS NOTED
DRILLING CONTRACTOR: ENVIRONMENTAL EXPLORATION INC.	BOREHOLE DIAMETER: 4 INCHES	SAMPLING METHOD: 2" SPLIT-SPOON
DRILLER: R. DOCKERY	TOTAL BORING DEPTH: 18.0 FEET BELOW LAND SURFACE	DATE BORING COMPLETED: 2-22-94



LITHOLOGIC DESCRIPTION

SAND. fine to medium grained. trace clay. tan-brown to black.

SAND. very fine to fine grained little silt. wet. grey to brown.

SAND. very fine to fine grained. trace silt. some clay. soft. wet. grey to black.

CLAY. very soft. little sand. fine grained. wet. grey to black.

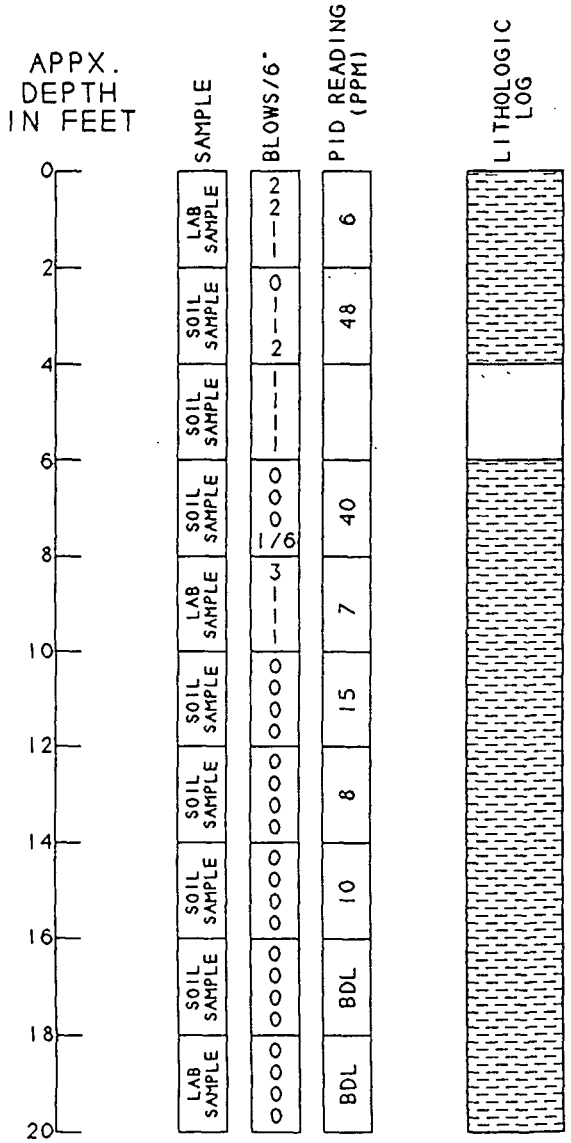
NO RECOVERY

CLAY. very soft. wet. grey to black.

Professional Service Industries, Inc. PSI 2030 Powers Ferry Road, Suite 460, Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: NPS-SB-04 PROJECT NUMBER: 513-44008

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON. SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	HOLLOW STEM AUGER	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	4 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	20.0 FEET BELOW LAND SURFACE	2-22-94



LITHOLOGIC DESCRIPTION

CLAY. very. soft. little sand. fine grained. wood. creosote odor. brown to black.

CLAY. very soft. little sand. fine grained. wood. wet. creosote odor. black.

NO RECOVERY

CLAY. very soft. some sand. fine to medium grained. wood. creosote odor. black.

CLAY. very soft. trace sand. fine grained. wood. wet. creosote odor. black.

CLAY. very soft. trace sand. wood. creosote odor. wet. black.

CLAY. very soft. cresote odor. wet. grey to black.

CLAY. very soft. wood. wet. creosote odor. black.

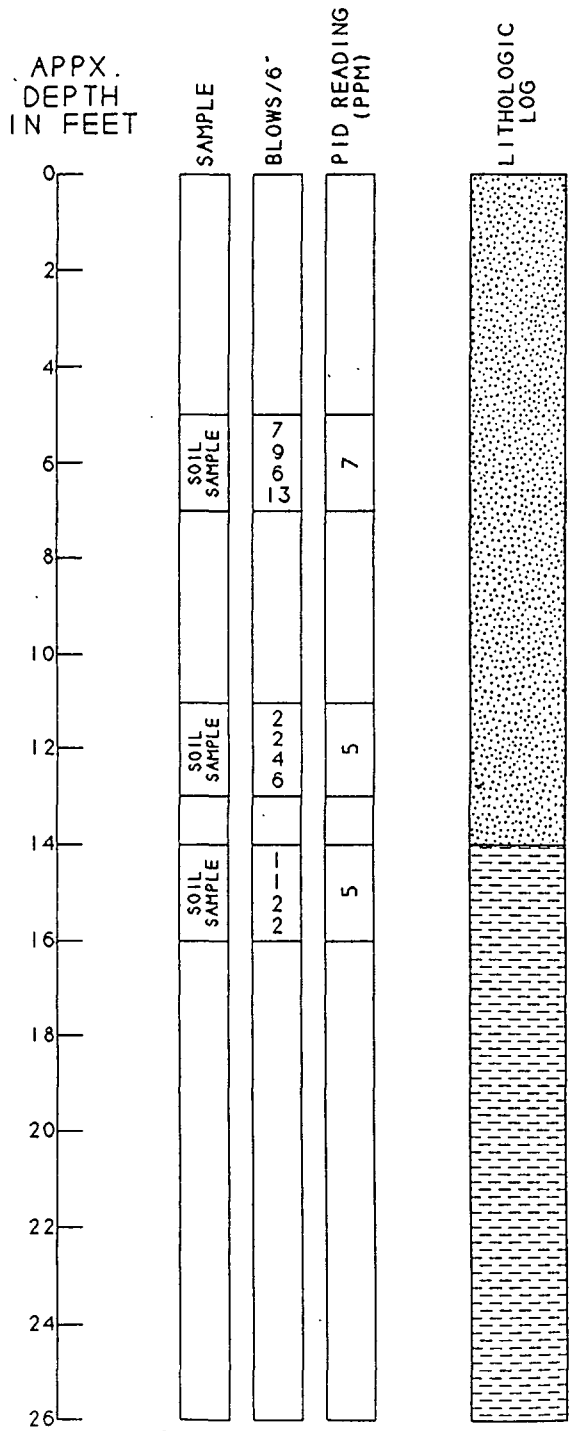
CLAY. very soft. wet. creosote odor. black.

CLAY. very soft. wet. black.

Professional Service Industries, Inc. 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: GS-SB-01 (1 OF 2) PROJECT NUMBER: 511-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON, SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	MUD ROTARY	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	10 & 6 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	46.0 FEET BELOW LAND SURFACE	11-20-93



LITHOLOGIC DESCRIPTION

SAND. fine to medium grained. some silt. wet. grey to brown-black. debris (wood and concrete).

SAND. fine to medium grained. some silt. wet. grey to black.

SAND. fine to medium grained. some silt. wet. grey to black. creosote odor.

SAND. fine to medium grained. some silt. wet. black. creosote.

SAND. fine to medium grained and gravel. fine to coarse. wet. black to white.

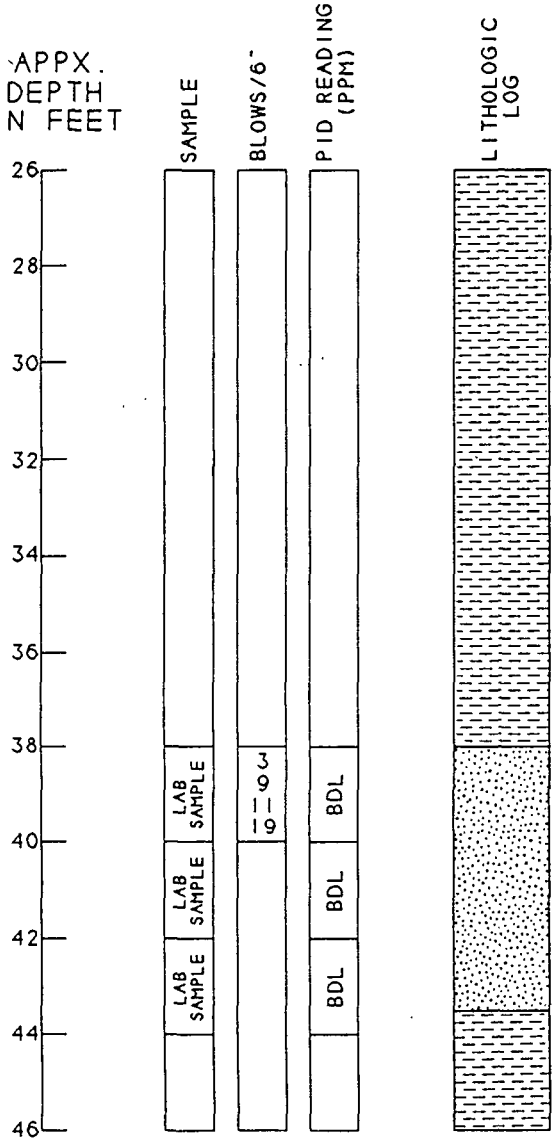
CLAY. very soft. some sand. fine grained. wet. black. creosote.

CLAY. very soft. some silt. wet. black to grey.

Professional Service Industries, Inc. 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING (2 OF 2) IDENTIFICATION: GS-SB-01 PROJECT NUMBER: 511-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON. SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	MUD ROTARY	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	10 & 6 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	46.0 FEET BELOW LAND SURFACE	11-20-93



LITHOLOGIC DESCRIPTION

CLAY. very soft. some silt. wet. black to grey.

SAND. very fine to fine grained. wet. grey to black. shells.

SAND. very fine to medium grained. trace silt. wet. black to grey.

SAND. very fine to medium grained. trace silt. little clay. very soft. wet. black to grey (to 43.5').

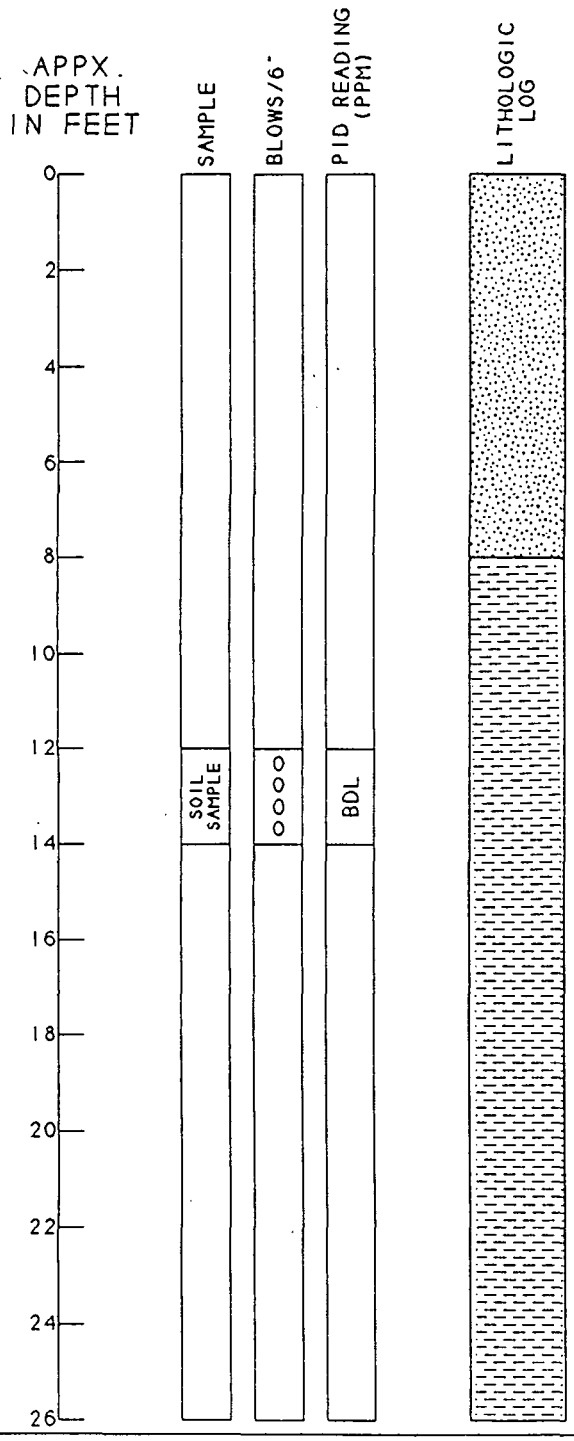
CLAY. very soft. some sand. very fine to medium grained. wet. black to grey.

CLAY. very soft. little sand. very fine to fine grained. wet. black to grey.

Professional Service Industries, Inc. psi 2030 Powers Ferry Road, Suite 460, Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: GS-SB-02 (1 OF 2) PROJECT NUMBER: 511-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON. SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	MUD ROTARY	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	14 & 8 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	45.0 FEET BELOW LAND SURFACE	11-19-93



LITHOLOGIC DESCRIPTION

SAND. fine to medium grained. little clay. little gravel. wet. black. creosote odor. wood and debris.

CLAY. soft. some silt. wet. black.

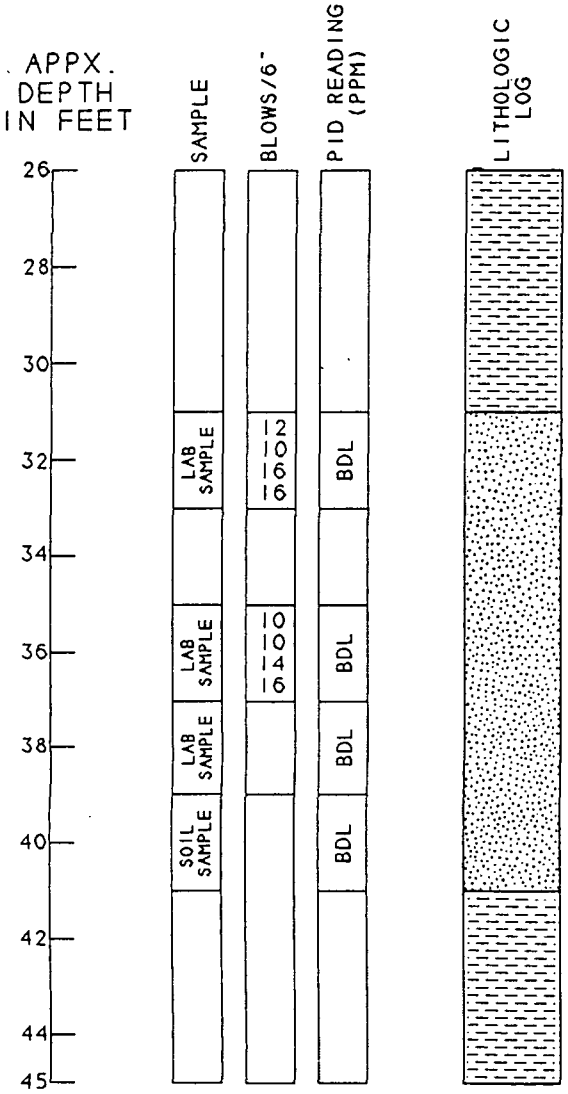
CLAY. very soft. little silt. wet. grey to black.

CLAY. very soft. some silt. trace sand. wet. black to grey.

Professional Service Industries, Inc. 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: GS-SB-02 (2 OF 2) PROJECT NUMBER: 511-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON. SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	MUD ROTARY	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	14 & 8 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	45.0 FEET BELOW LAND SURFACE	11-19-93



LITHOLOGIC DESCRIPTION

CLAY. very soft. some silt. trace sand. wet. black to grey.

SAND. fine to medium grained. some silt. trace clay. wet. grey to black.

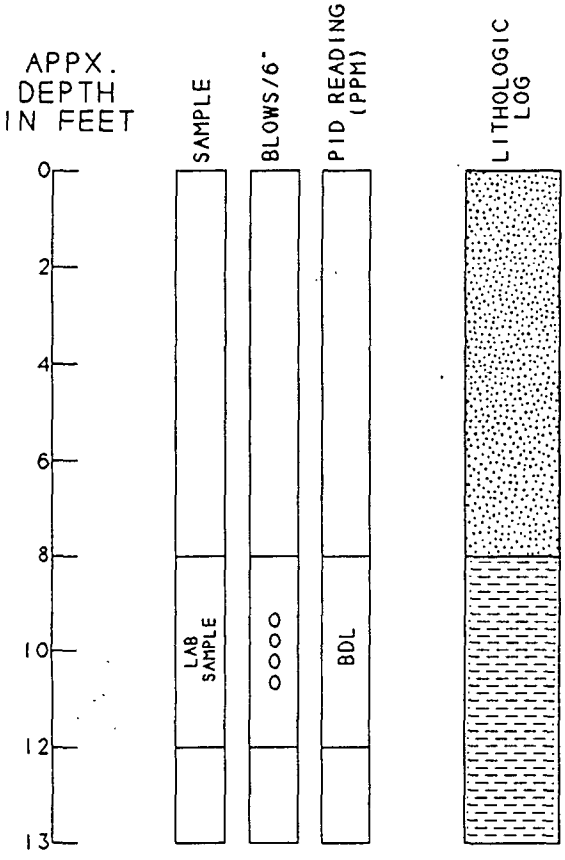
SAND. fine to medium grained. some silt. wet. grey to black.

CLAY. very soft. trace sand. wet. grey to black.

Professional Service Industries, Inc. 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: GS-SB-02S PROJECT NUMBER: 511-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON, SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	MUD ROTARY	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	10 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	13.0 FEET BELOW LAND SURFACE	11-17-93



LITHOLOGIC DESCRIPTION

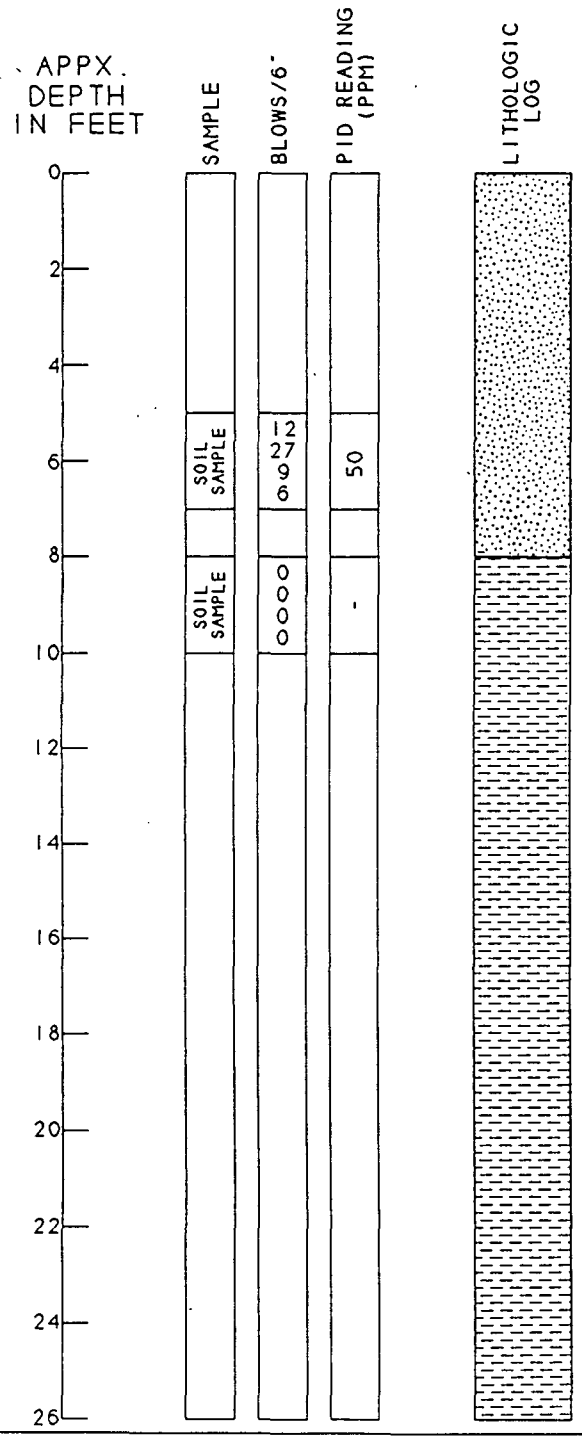
SAND. fine to medium grained, some silt, wet, black, debris and wood from 6 to 8 feet.

CLAY, very soft, some silt, trace sand, wet, black to grey.

Professional Service Industries, Inc. 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: GS-SB-03 (1 OF 2) PROJECT NUMBER: 511-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON, SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	MUD ROTARY	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	10 & 6 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	51.0 FEET BELOW LAND SURFACE	11-22-93



LITHOLOGIC DESCRIPTION

SAND. fine to medium grained. some gravel. fine to coarse. wet. brown to black. debris at 2 feet. creosote odor at 3 feet.

SAND. fine to medium grained. some silt. wet. black. wood debris. creosote odor.

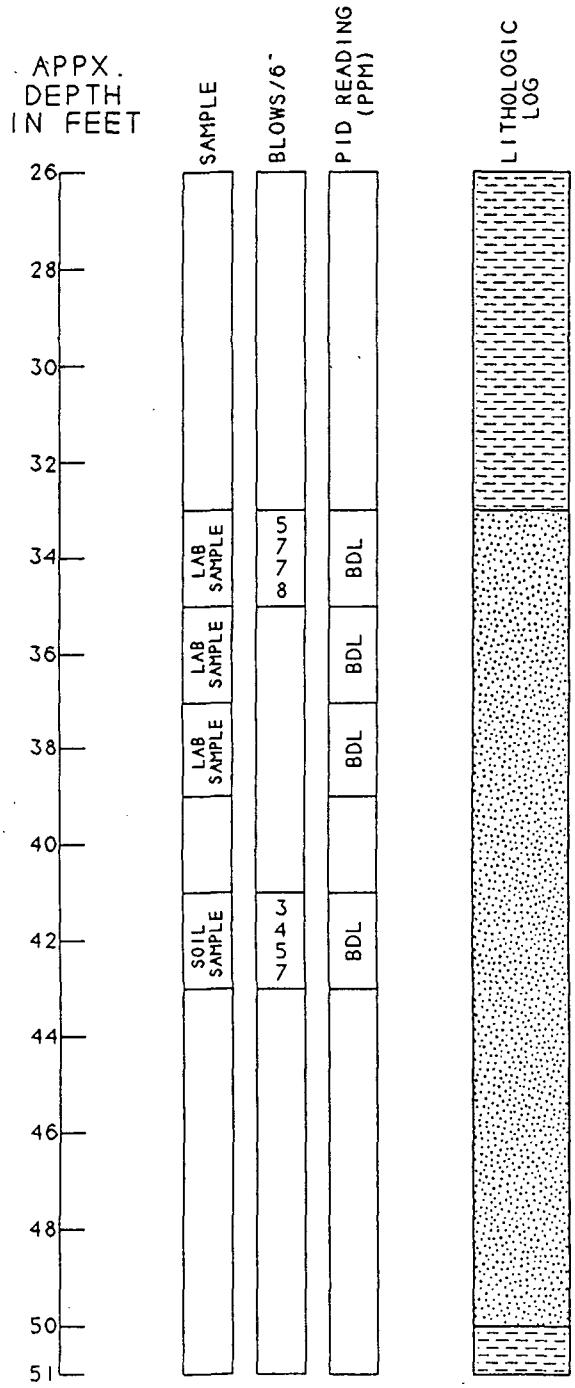
CLAY. very soft. some silt. wet. black.

CLAY. very soft. some sand. very fine to fine grained. wet. grey to black.

Professional Service Industries, Inc. PSI 2030 Powers Ferry Road, Suite 460, Atlanta, GA 30339	SOIL BORING LOG	SOIL BORING IDENTIFICATION: (2 OF 2) GS-SB-03 PROJECT NUMBER: 511-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON. SOUTH CAROLINA

GEOLOGIST:	DRILLING METHOD:	SAMPLING INTERVAL:
S. FINE	MUD ROTARY	SAMPLED AS NOTED
DRILLING CONTRACTOR:	**BOREHOLE DIAMETER:**	**SAMPLING METHOD:**
ENVIRONMENTAL EXPLORATION INC.	10 & 6 INCHES	2" SPLIT-SPOON
DRILLER:	**TOTAL BORING DEPTH:**	**DATE BORING COMPLETED:**
R. DOCKERY	51.0 FEET BELOW LAND SURFACE	11-22-93



LITHOLOGIC DESCRIPTION

CLAY. very soft. some sand. very fine to fine grained. wet. grey to black.

SAND. very fine to fine grained. some silt. wet. grey to black.

SAND. very fine to fine grained. little silt. trace clay. wet. grey to black.

SAND. very fine to fine grained. some silt. trace clay. wet. grey to black.

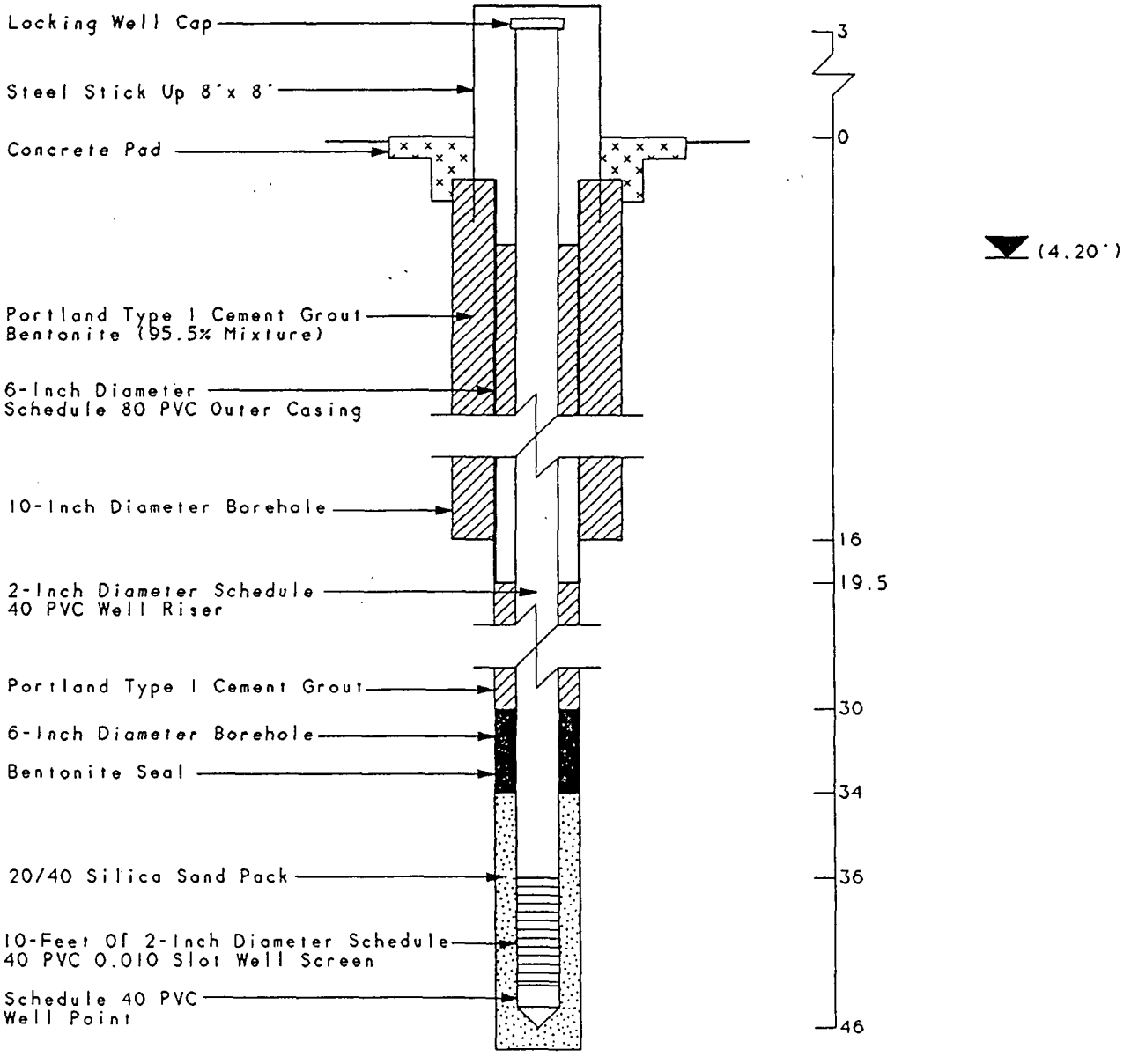
SAND. very fine to fine grained. some silt. wet. grey to black.

SAND. very fine to fine grained. some silt. little clay very soft. wet. grey to black.

CLAY. very soft. little sand. very fine to fine grained. wet. green to grey.

Appendix E
Monitoring Well Construction Logs

Professional Service Industries, Inc. PSI 2030 Powers Ferry Road, Suite 460, Atlanta, GA 30339	MONITORING WELL CONSTRUCTION DETAILS	MONITORING WELL IDENTIFICATION: GS-MW-01 PROJECT NUMBER: 513-34097
PROJECT: CHARLESTON HARBOR SITE	LOCATION: CONCORD STREET, CHARLESTON, SOUTH CAROLINA	
GEOLOGIST: S. FINE	DRILLING METHOD: MUD ROTARY	WELL DIAMETER: 2 INCHES
DRILLING CONTRACTOR: ENVIRONMENTAL EXPLORATION INC.	BOREHOLE DIAMETER: 10 INCHES, 6 INCHES	CASING ELEVATION: N/A
DRILLER: R. DOCKERY	OUTER CASING DEPTH: 16.0 FEET BELOW LAND SURFACE	DEPTH TO WATER: 4.2 FEET BELOW LAND SURFACE
DATE WELL INSTALLED: 11-20-93	TOTAL WELL DEPTH: 46.0 FEET BELOW LAND SURFACE	DATE WATER LEVEL MEASURED: 11-21-93
	SCREENED INTERVAL: 36 TO 46 FEET BELOW LAND SURFACE	



APPROXIMATE DEPTH TO GROUNDWATER

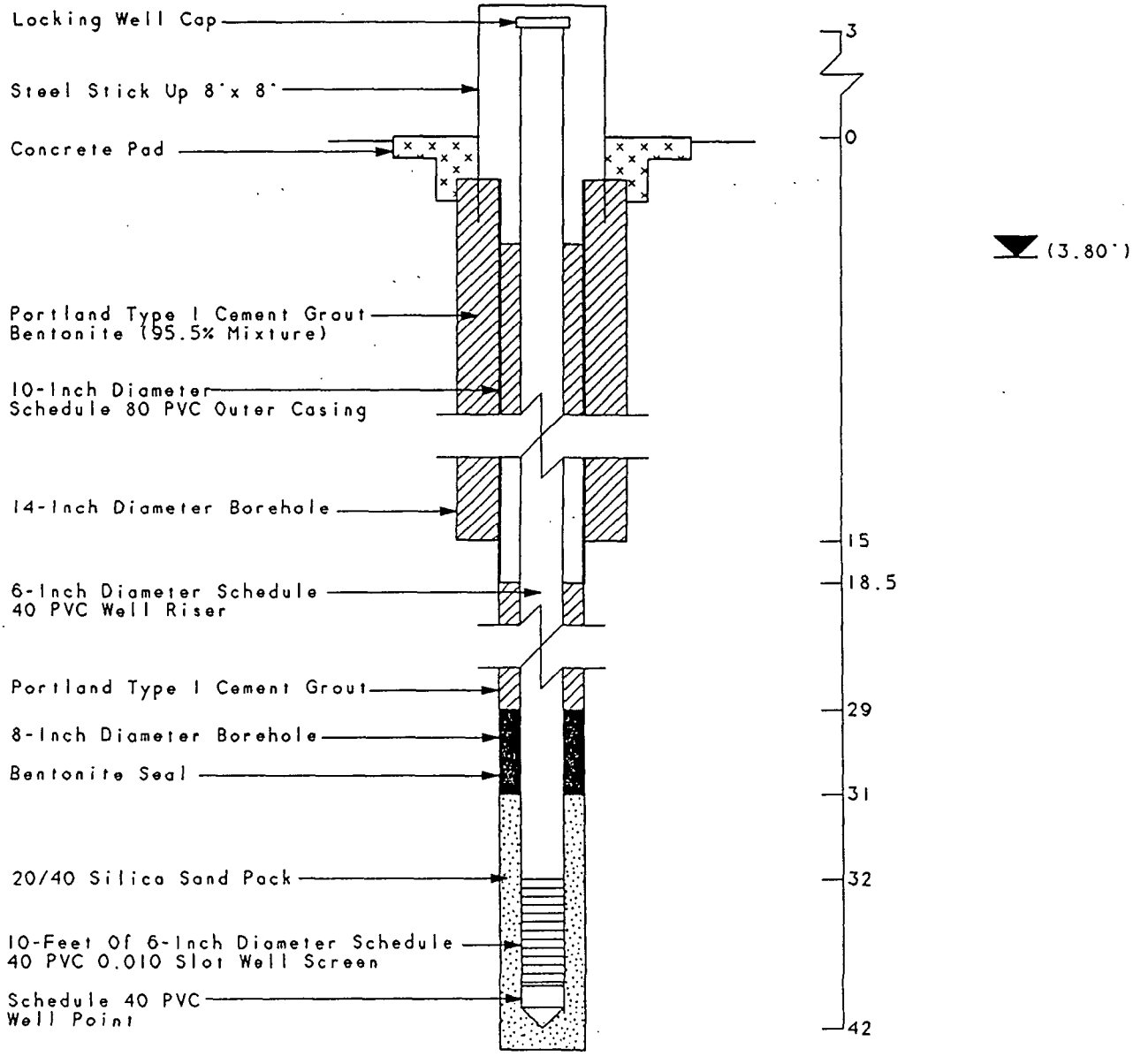
NOT TO SCALE

APPROXIMATE DEPTH IN FEET

Professional Service Industries, Inc. 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	MONITORING WELL CONSTRUCTION DETAILS	MONITORING WELL IDENTIFICATION: GS-MW-02 PROJECT NUMBER: 513-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON. SOUTH CAROLINA

GEOLOGIST: S. FINE	DRILLING METHOD: MUD ROTARY	WELL DIAMETER: 6 INCHES
DRILLING CONTRACTOR: ENVIRONMENTAL EXPLORATION INC.	BOREHOLE DIAMETER: 14 INCHES 8 INCHES	CASING ELEVATION: N/A
DRILLER: R. DOCKERY	OUTER CASING DEPTH: 18.5 FEET BELOW LAND SURFACE	DEPTH TO WATER: 3.8 FEET BELOW LAND SURFACE
DATE WELL INSTALLED: 11-19-93	TOTAL WELL DEPTH: 42.0 FEET BELOW LAND SURFACE	DATE WATER LEVEL MEASURED: 11-21-93
	SCREENED INTERVAL: 32 TO 42 FEET BELOW LAND SURFACE	



APPROXIMATE DEPTH TO GROUNDWATER

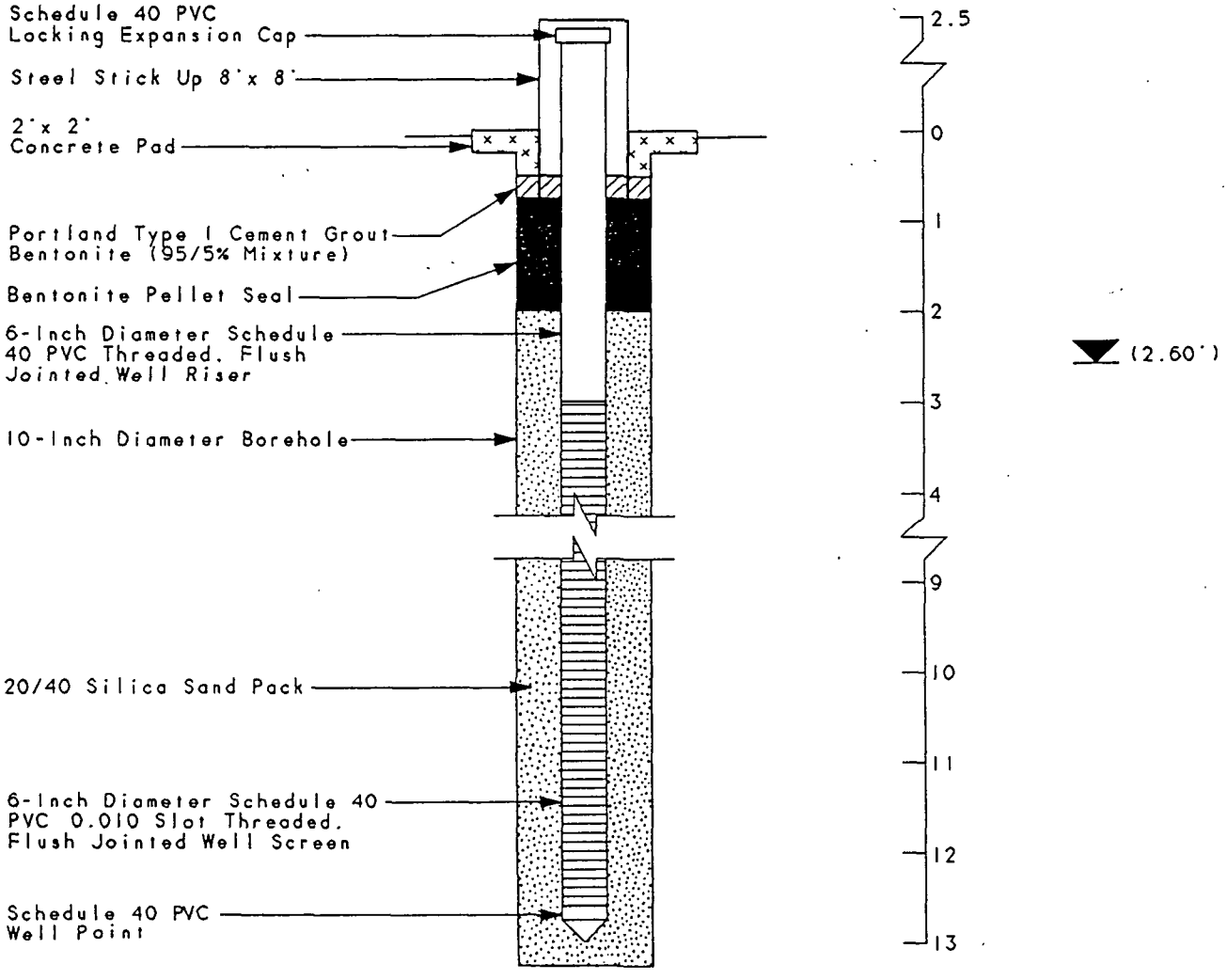
NOT TO SCALE

APPROXIMATE DEPTH IN FEET

Professional Service Industries, Inc. PSI 2030 Powers Ferry Road Suite 460 Atlanta, GA 30339	MONITORING WELL CONSTRUCTION DETAILS	MONITORING WELL IDENTIFICATION: GS-MW-02S PROJECT NUMBER: 513-34097

PROJECT:	LOCATION:
CHARLESTON HARBOR SITE	CONCORD STREET CHARLESTON, SOUTH CAROLINA

GEOLOGIST: S. FINE	DRILLING METHOD: MUD ROTARY	WELL DIAMETER: 6-INCHES
DRILLING CONTRACTOR: ENVIRONMENTAL EXPLORATION INC.	BOREHOLE N AMETER: 10-INCHES	CASING ELEVATION: N/A
DRILLER: R. DOCKERY	TOTAL WELL DEPTH: 13.0 FEET BELOW LAND SURFACE	DEPTH TO WATER: 2.6 FEET BELOW TOP OF CASING
DATE WELL INSTALLED: 11-17-93	SCREENED INTERVAL: 3 TO 13 FEET BELOW LAND SURFACE	DATE WATER LEVEL MEASURED: 11-21-93

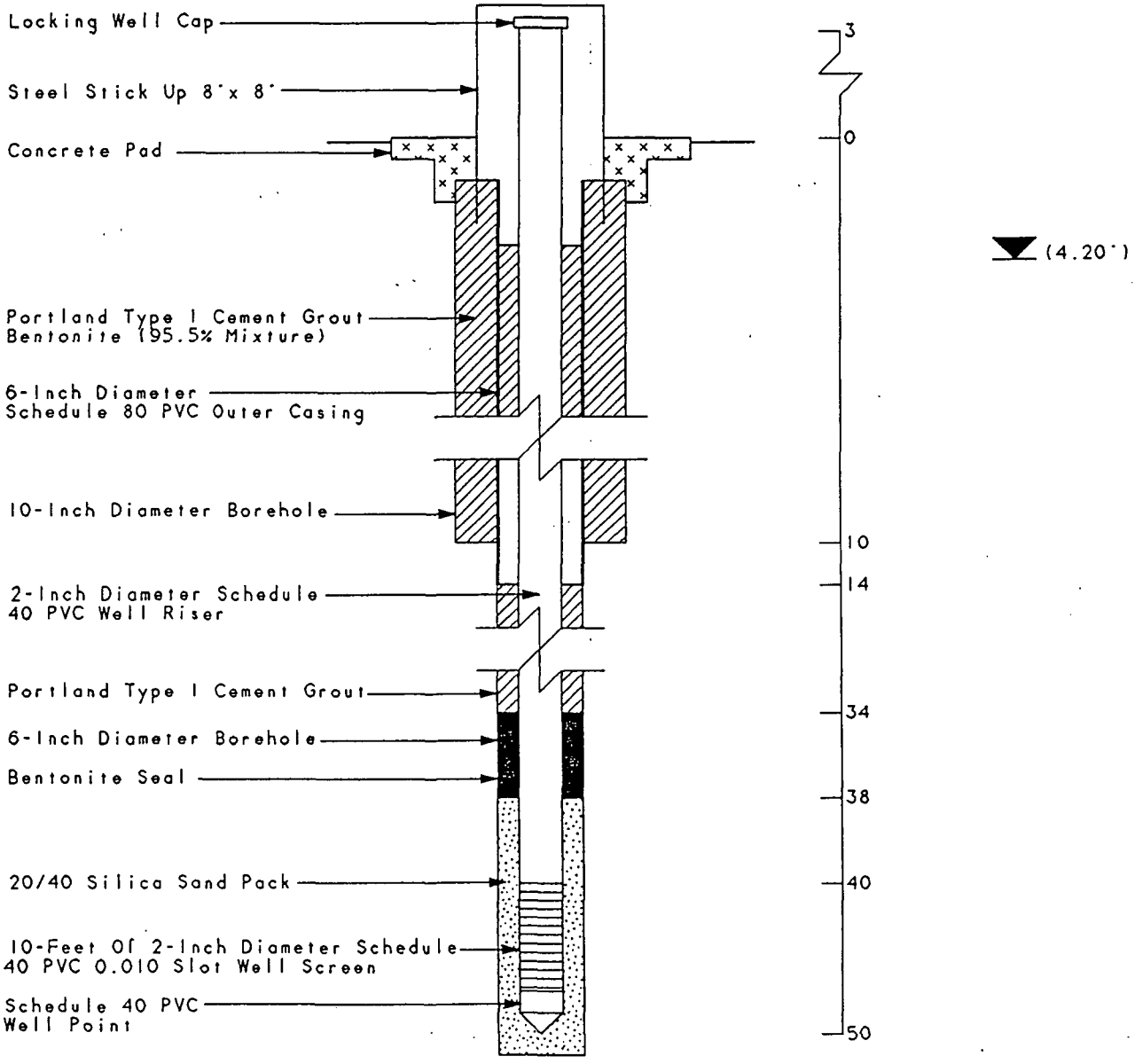


APPROXIMATE DEPTH TO GROUNDWATER

NOT TO SCALE

APPROXIMATE DEPTH IN FEET

Professional Service Industries, Inc. PSI 2030 Powers Ferry Road, Suite 460, Atlanta, GA 30339	MONITORING WELL CONSTRUCTION DETAILS	MONITORING WELL IDENTIFICATION: GS-MW-03 PROJECT NUMBER: 513-34097
PROJECT: CHARLESTON HARBOR SITE		LOCATION: CONCORD STREET, CHARLESTON, SOUTH CAROLINA
GEOLOGIST: S. FINE	DRILLING METHOD: MUD ROTARY	WELL DIAMETER: 2 INCHES
DRILLING CONTRACTOR: ENVIRONMENTAL EXPLORATION INC.	BOREHOLE DIAMETER: 10 INCHES, 6 INCHES	CASING ELEVATION: N/A
DRILLER: R. DOCKERY	OUTER CASING DEPTH: 14.0 FEET BELOW LAND SURFACE	DEPTH TO WATER: 4.2 FEET BELOW LAND SURFACE
DATE WELL INSTALLED: 11-22-93	TOTAL WELL DEPTH: 50.0 FEET BELOW LAND SURFACE	DATE WATER LEVEL MEASURED: 11-23-93
	SCREENED INTERVAL: 40 TO 50 FEET BELOW LAND SURFACE	



APPROXIMATE DEPTH TO GROUNDWATER

NOT TO SCALE

APPROXIMATE DEPTH IN FEET